

The Boston Medical and Surgical Journal

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January 25, 1917

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New England Surgical Society.

INAUGURAL MEETING, BOSTON,
OCTOBER 5-7, 1916.

PRESIDENTIAL ADDRESS*.

By SAMUEL J. MIXER, M.D., BOSTON.

As the first President of this Society, and at this, its first meeting, it is fitting that I should say something of the reasons for its existence and the results that its founders hope to obtain.

There are many medical societies, large and small, from the great American Medical Association to the small journal or dining clubs, limited to a few members, some of general scope and some devoted to the special branches of the profession. These societies are absolutely essential to the life of the profession, stimulating intellectual competition and production, and giving their members a chance to advance new ideas and discuss old ones, as well as to encourage that personal contact and acquaintance, without which no body of men can do its best work.

The American Medical Association is too large and some of the special societies are of too limited a membership to afford a chance for much necessary work, and it has been felt that a society, representing the best effort of the surgical profession of New England was necessary to help raise the standard and aid in solving many

* Delivered at the Inaugural Meeting of the New England Surgical Society, Boston, October 5, 1916.

of the problems that are before us. Is it too much to expect this representative body of men to add materially to the sum of surgical knowledge and, at the same time, to educate themselves and each other, thus becoming more fitted to serve and aid their suffering and unfortunate fellow men.

One qualification for membership in this society has been considered absolutely essential—that is, that every member must be a Fellow of the American College of Surgeons. That association has endeavored to set a high standard for those who would call themselves surgeons, and though some of high rank and attainment have held aloof, its efforts are always in the right direction, and it should be recognized and encouraged in every possible manner.

In studying the problems of the present and future we must have a knowledge of the successes and failures of the past, for both have helped us on our way up the hill whose top seems even now so far, far above us. During the period of my professional life many problems have been solved, but is there one of us who does not daily meet the seemingly unanswerable? I say "seemingly," for let us hope that as we go on the now impossible may become possible. Mankind has advanced from the Stone Age to the present solely through the efforts of those optimistic souls who refused to recognize as impassable the barriers that blocked the way, and today many of these barriers lie behind us, and our vision, as we climb the hill and look back, has a much wider range than our forefathers had. We begin to think that everything in the world is better today than yesterday.

day, and that reason at last will triumph, when, in a moment, that primeval instinct that is common to man as well as beast, that causes one to prey on the other, that makes the wolf slay and the parent protect its offspring, asserts itself; and war, more widespread, more deadly, more awful because more scientific, demands the lives of millions of the world's best workers, and a loss of material wealth that must be felt for generations. We, as fortunate dwellers in a land which has so far escaped the calamities and sorrows of our neighbors, should face the fact that war will not end with the present struggle, and that if we are to continue our national life, we must be prepared to hold our own if necessary.

A few words as to the amount of surgical work done now as compared with that done in 1880, the year after I graduated from the Medical School. At that time a large part of the surgery of this region was done either at, or by men on the staffs of two hospitals. At the Massachusetts General Hospital there were, in 1880, 1003 operations and, though the number of beds was not very much greater in 1915, there were 4046. It must be remembered also that in 1880 many operations were entered on the books that now would be done in the out-patient department under local anaesthesia. Abdominal operations were very few in number and many regions of the body now regularly attacked were not invaded. As the surgical field widened, the number of hospitals, public and private, not only in the large cities but in the smaller cities and towns, multiplied enormously with a corresponding increase in the size of hospital staffs, while many more members of the profession took up surgical work. Neurological, pelvic and abdominal surgery were entering on their experimental stage; the gynecologist was not the trained surgeon of today, and many members of the profession in general began to do surgical work without proper training, tempted thereto by prospect of surgical fees or flattered by the idea that anyone who could amputate a breast (without dissecting the axilla) was a surgeon. The result was something not pleasant to look back upon. Much wretched work was done and will always be done if men, untrained in mind and hand, attempt to do a surgeon's work. It must be strongly emphasized that a surgeon is not born, but made. Thorough training of mind and hand, hospital experience under the control of able masters—these are absolute essentials and should be insisted upon in the future as they have not been in the past. It is the duty of this society to use its influence in this direction.

The border line between medicine and surgery is not well defined, and the true surgeon will use the training and knowledge of the internist and laboratory expert whenever it is possible to do so. Not every stomach or intestine that works badly is a surgical case, nor does every enlarged thyroid need operation. A surgical operation is a serious thing in spite of the idea

to the contrary so common among the laity, and should, like matrimony, not be entered into "lightly or unadvisedly," but when it cannot be avoided it should be done, carefully and thoroughly as befits a matter of life and death. A man is not conservative who half does an operation for malignant disease any more than he who does an unnecessary operation in what is really an inoperable case, and he who is guilty of the latter through his lack of judgment and overconfidence in his own powers is as guilty as he who does the former from lack of knowledge and skill. No operation is too formidable or dangerous if it offers a reasonable chance of cure; no operation is justifiable in an incurable case that has not a reasonable chance of palliation; incomplete operation in cancer is generally like the cultivation of a field—the crop grows the faster for it.

Were there no other problems to be solved, the treatment of malignant disease offers a field for study and research that promises to keep us busy for years to come, but I am optimist enough to believe that cancer will be conquered at last. The insistence on early recognition and prompt and radical operation is doing much, but even today the family physician will watch a bunch grow in a woman's breast or put salve on an ulcerated lip until the chance of almost certain cure is past and it is he, and not the surgeon who operates but fails to cure, who is guilty of a horrible death. Why will a man who does not know, and knows he does not, take such unnecessary and criminal responsibility? It is a well-established fact that non-malignant growths and ulcerations may become malignant; that neglected gallstones and gall-bladder infections will cause fatal pancreatitis, and yet how often we hear repeated the words "don't trouble that until it troubles you."

Early and thorough operation then is the best weapon that we have to use in this fight today. Serum therapy, x-rays, radium have each been claimed as cure-alls, but at the present only a few enthusiasts have any faith in their power to cure, except in those superficial cases that can be better treated. They may in proper cases and especially in properly trained hands do good, but up to the present time more lives have been lost through their improper use than have been saved. They have their place, and it is perhaps possible, I might almost say probable, that we may through them arrive at the goal we strive for, especially in those advanced cases that have not been recognized because of want of education of both physician and patient. Let us hope that we may be of some help in this fight with cancer, for victory means one of the greatest triumphs in the whole field of medicine.

Those of us who have done the greatest amount of work on the intestinal tract are the least satisfied with certain of the results obtained. Whenever a large number of operations have been devised for the relief of a certain pa-

thological condition, and new methods are constantly proposed having the same end in view, we may be sure that the problem is a difficult one, and that the ideal method has not been discovered. The surgical cure, final cure I mean, of intestinal stasis is a case in point, and though short-circuiting, resection, freeing of adhesions and all the other devices that have been suggested may work well in some cases, temporarily or permanently, we are grieved and disappointed in others, apparently similar, to find that water will not run up hill or, like the noted philosopher, find that both cats will go through one hole. The stomach is today probably the digestive organ most frequently attacked, as it is not particularly resentful to even maltreatment, and the various forms of operations upon it are well and favorably known to us all; but who can claim to cure every case of even non-malignant disease, though the operative procedure be faultless in technic as we understand it? Here again is work and thought for us all.

The war has brought many new problems to the surgeon as it has to the military man and the engineer. New methods of warfare have brought new forms of disease and injury, and old ideas and methods must give way to more modern and appropriate ones. Splendid work is being done on European battlefields and in European hospitals, and as Americans we can be proud to say that many from our own ranks have done their part, and done it well. Those of us who have had to stay at home envy those who could go and win honor for us all. May our American surgical units not cease their good work, or their numbers diminish, till a lasting peace shall come and right shall reign once more. More men are needed, and if only that we may be trained, it is not seemly that they should be called for in vain. We can help. Let us to do it as many of our members have already done it, and are to do it again.

And now, closely connected with this idea and something even more urgent to us as Americans is the fact—a fact, not a theory—that while our means of national defence, to say nothing of offence, are lamentably insufficient, our medical corps to take care of such troops as we have, or may have, is still more numerically inadequate. Military surgeons are absolutely needed in this country, for should the unexpected, or at least, unwished for, happen and we be plunged into a war, there are very few medical men fitted to take their places in the service, and we should be worse off than during the Spanish war, and many of our best men would die from want of proper care. The men trained or to be trained in Europe will make a good leaven, but they are not enough to do all the work. The medical reserve corps was started to help fill the gap, but some of its momentum was lost, and now each and every one of us should do his best both by precept and example to put it in the place it should occupy in this country, a body of able, willing men, partially trained for their duty at

least, and ready for the call. The best of our younger men should be urged to join the Medical Reserve Corps as a duty that they owe to themselves and their country. If they do this, politics and politicians cannot deprive our sons and our brothers in the field, of proper medical care should the need arise, nor can they turn the work over to the contract surgeon who gets his job by favor, not merit. Do not let us wait unprepared until the day of trouble comes and we hear one arise and cry:

"For all we have and are—for all our children's sake Stand up! and face the war—the Hun is at the gate."

Members of the New England Surgical Society: We welcome you to Boston on this our first meeting. We welcome you not as strangers or neighbors, but as members of the same family, offspring of those illustrious surgeons who did in past days the surgery for New England, and whose wise teaching and example has made it possible for us to carry on their work in hospital and school, in city and town throughout the country and the world today. We are proud of our corner of this great land, we are proud of our great men of the past, and their achievements. But the pace today is fast, and if we are to hope to lead in the race we must push ever forward and work with body, mind and heart. May this new society of ours help to keep us shoulder to shoulder as we press onward to overcome disease, superstition and cowardice; and as one by one we throw up our hands and fall out, may worthier, younger and better trained men be ready to fill up the ranks!

A GROUP OF INJURIES IN MODERN WARFARE.*

By JOHN W. CHURCHMAN, M.D., NEW HAVEN, CONN.

ONE of the most interesting features of the present war is the occurrence of nerve injuries without the typical symptoms hitherto supposed to correspond with them. It will be remembered that much of our present knowledge of the clinical side of nerve injuries dates from the work of Weir Mitchell during the Civil War, and it is quite interesting that the knowledge gained during the present war will probably lead to a revision of the data collected by him.

One of the most striking instances of this sort is injury of the musculo-spiral nerve unassociated, in some cases, with sensory disturbances, and in others unassociated with motor disturbances. The explanation of these cases doubtless lies partly in the incorrectness of our present ideas as to the cutaneous distribution of the musculo-spiral nerve, and partly in the occurrence of variations in the normal arrangement of the nerve—variations which may be commoner than is generally supposed. Lesions of

* Read at the Inaugural Meeting of the New England Surgical Society, Boston, October 5, 1916.

the musculo-spiral without disturbance of sensation on the dorsal aspect of the lower forearm are doubtless due to the fact that the injury is below the origin of the branch of the nerve, called by the French the dorsal anti-brachial cutaneous, which arises from the nerve high in the arm. But there are other cases which are not so readily explained. A case, for example, occurred in the hospital at Juilly, in which there was complete division of the musculo-spiral nerve, the ends of the divided nerve being plainly visible in the wound. In spite of this fact there were no sensory disturbances in the hands, but a very curious feature was that on electric stimulation of the distal portion of the nerve, pricking was felt in the portion of the skin of the hand usually thought to be supplied by the musculo-spiral. A case of this sort can be explained only by assuming a double nerve supply to the skin concerned.

Another very interesting type of nerve injury is that associated with concussion. A soldier, for example, who was being transferred from one garrison to another was seized on the train with complete retention of urine, and sent to our hospital for this condition. The history was that nine months previously he had been near an exploding shell, but had not been struck. The shock had rendered him unconscious, and during the next few hours there had been complete retention of urine and complete constipation. Since that time, though there were no bodily injuries whatever, the patient had been unable to void and continually used a catheter. On examination we found him entirely anaesthetic to pain, touch, and temperature in the regions of the skin supplied by the last dorsal and first sacral segments. The concussion had affected not only the urinary centre, but also the sexual centre, and had resulted in a complete loss of both functions. The condition was entirely due to spinal shock, curiously limited to the lower portion of the cord. Apparently it was associated with a permanent lesion, as there had been no improvement of symptoms in the months which had intervened since the original trouble.

One of the commonest forms of nerve lesions seen in an active war hospital is the neuroma following a grazing wound, or a partial section. These injuries lead to the characteristic carrot-like bulbs, which are associated with paraesthesias, sometimes exceedingly painful, and paralysis more or less complete. For these lesions surgical intervention is indicated, but it may be said that the results of nerve sutures and nerve plastics during this war are on the whole pretty unsatisfactory. It is obvious that the two factors essential for a successful nerve suture, namely, intervention promptly after the injury, and absence of sepsis, are in this war usually absent. All the wounds are infected, and owing to the infection and to the fact that it is necessary to move patients about from one hospital to another a good deal, it is rarely pos-

sible to operate on these cases at a favorable time. Recent reports from the German side have indicated better results in nerve sutures than my experience in France would have led me to believe possible. It is conceivable that the excellence of these reported results is in part due to the fact that the German specialized hospitals are nearer the front than the French, and that their neurological cases receive treatment early.

A third curious nerve condition seen in the present war is the presence of high-grade sensory disturbance entirely confined to the terminal portion of a nerve. A sergeant, for example, who entered our hospital complained, of almost intolerable pain and tenderness over the inner aspect of the dorsum of the foot, the tenderness being so acute that stockings could not be worn nor the pressure of the bed clothes borne. The man had three shell fragments along the sciatic nerve in the thigh, popliteal space, and calf, but the symptoms were entirely localized to an area on the foot which could be covered by the palm of the hand. Many other cases of this sort were seen; in some of them the lesion being larger and the area of sensory disturbance smaller than in the one just quoted.

A condition frequent in the present war, but relatively rare in civil practice, which has demanded a good deal of attention, is the mild erysipelas often developing about the wounds. All the wounds seen in a base hospital in France are badly infected. But in my experience serious erysipelas was, curiously enough, rare. We did, however, have many cases of a mild variety, and the disease sometimes developed weeks after admission. These cases were characterized by a blush of the skin about the wound, spreading rapidly, and often ending in an abscess in the cellular tissue, but the associated symptoms were usually mild, and the cases always ran a favorable course. This subject has received study, particularly at Ris Orangis, and it is probable that the disease is due to a streptococcus morphologically different from the usual varieties.

So much has been written about trench feet that this condition is now familiar to everyone. A great deal of study has been given to the etiology of this condition, and a number of observers have regarded it as infectious in character. Recently, a French bacteriologist has isolated an organism from the disease which allies it in his opinion with Madura foot. These findings, however, are difficult to accept, for careful bacteriology is extremely difficult in soldiers who are as filthy as the present French army is, and all the clinical features of trench feet suggest a disease that is vascular in origin. It is curious, however, that the majority of cases have occurred in the younger and not in the older soldiers. The factors concerned seem to be cold, wetness, and possibly the application of too tight puttees. The excellence of the present organization in trench warfare makes it possible for soldiers to care for their feet more in-

telligently, and the incidence of trench feet grows less and less.

In addition to the types of cases which occur with very obvious gangrenous lesions, soldiers are also seen who after exposure of the feet to cold and water, though they present no lesions whatever, suffer almost intolerable pain in the feet. These cases suggest the clinical picture of the early stages of thrombo-angiitis obliterans.

Probably the one chapter of surgery which has made the most distinct advance owing to the activities of the present war is the chapter which has to do with the localization of projectiles. All civil surgeons who have searched for a foreign body know how unsatisfactory this search usually is, but the development of methods of localization in the war has transformed this search into one of the exact surgical manoeuvres. A foreign body impervious to x-rays can now be localized with the greatest exactness, so exactly indeed that under local anaesthesia a needle can be inserted directly on it. This method of localization consists in the development of the well-known method previously used, in which the position of the foreign body is determined by the intersection of theoretical diagonals drawn by means of radioscopic examination through the eyes of a metal compass. The only contribution which I made to this method was the substitution of two separate lead rings for the caliper compass. This improvement, which seems rather trivial, as a matter of fact renders the technical side of the operation much simpler.

It is probably not generally realized that during this war a gigantic clinical experiment on a scale hitherto undreamed-of has been made as to the efficiency of prophylactic injections of tetanus antitoxin. In the early months of the war the French sanitary organization, caught unprepared, was unable to cope with its huge problem; and during these days the wounded, often lying for hours in the trenches before being rescued, and then spending days on an ill-fitted sanitary train, usually failed to receive the prophylactic injection. At this time, tetanus was very frequent, very fatal, and contributed largely to the mortality. The French sanitary organization, however, soon adapted itself in an extraordinary fashion to the needs of the war, and at the present time is handling its gigantic problem in a manner that should command the admiration of the world. Every wounded man who runs the slightest risk of developing lock-jaw receives a prophylactic injection immediately at the front. As a result tetanus, so rife in the early days of the war, has been practically eliminated, and only very occasional cases are now seen. These occasional cases are usually of a mild, chronic type. The extraordinary thing is not so much that the soldiers who need it receive this prophylactic injection, but also that it is seldom given uselessly; and when one bears in mind the terrifically strained conditions under which surgeons have to work at the front,

one can only be deeply impressed by their sagacity and discretion. During my stay in France I saw only one case of tetanus, and this was the rare type entirely localized in the right arm, and developing nearly two months after the original injury. This patient ran a chronic course, but when his symptoms increased a large shell fragment lying in the shoulder was localized and removed, and he at once recovered.

The French helmet has, of course, by this time become familiar to everyone. It has been copied by the English, who use the type which suggests so strongly the army of Oliver Cromwell, and has the same purpose as the French helmet. The effect of the helmet on scalp wounds has been very interesting. It has increased their number. This means, of course, that the soldiers who would, in the early days of the war, have been killed by gunshot wounds in the head now escape, receiving, instead of mortal injuries, only slight scalp wounds. (A photograph was shown of a helmet with a perforating bullet wound, and the photograph of the soldier showing a slight scalp scratch.) There has been some discussion recently as to the ultimate value of the French helmet. Doubt has been cast on its importance in recent publications. But at the time I left France it was still regarded highly.

Everyone is familiar with the method by which the soldier reaches the base hospital from the front. Photographs of ambulances surrounded by doctors and nurses are common in the newspapers of the day. It is, however, not generally known what becomes of the patients when they leave the base hospitals, the interest in the soldier apparently dying out as soon as he arrives from the trench, and not following him when he leaves the base. The patients in the base hospital may be divided into three groups: The cured ones are sent to a clearing depot from which they go to their homes for a rest of seven days. They are then required to report to their depot of matriculation, where they undergo a period of training of about three or four weeks, and are then sent back into active service, either in the trenches or elsewhere. The permanently disabled cases are required to appear before a Council of Reform, which examines them, and, if the disability is regarded as permanent, reforms them; that is to say, sends them back into civil life, from which they cannot again be summoned to military service. At the time a patient is reformed in this way a pension is allotted him by the Council of Reform, representing a percentage of his wage-earning capacity proportional to what the Council deems he has lost in wage-earning ability. For example, a farmer who comes from Bordeaux and was probably earning, say, ninety francs a month, has lost three fingers of the left hand. He will be now regarded by the Council as capable of earning only sixty francs, and he is, therefore, given a pension of thirty-three and a third per cent. In this way France is

now solving, and finally solving, her pension problem, and will have no bickering on this subject after the war is over.

The convalescent patients in an active base hospital, like the one of which I had charge at Passy, are moved out as soon as possible in order to keep the beds empty for fresh, seriously wounded cases from the front. This means a good deal of strain on the transportation system, but this is now so well organized that the cases are taken from hospital to hospital without much delay. The magnitude of the transportation problem may be inferred from the fact that France now has four hundred and fifty thousand medical military beds mobilized. The convalescents at Passy were sent either to an interior hospital for further convalescence or to a specialized hospital (for example, in injuries of the ear to an otological hospital), and in this way gradually worked their way back either into civil life or into the auxiliary army.

One very interesting development has been the establishment of Mohammedan hospitals. The Mohammedan insists upon the observance of many customs which it is practically impossible to carry out in a hospital. For example, he will not eat food on which a shadow has fallen while it is being served. Traditions of this sort make constant, annoying problems in an ordinary hospital, and France has solved the difficulty by establishing special Mohammedan hospitals, one of which is situated in Orleans.

[NOTE: This paper was illustrated by lantern slides, showing photographs and paintings of the various conditions described.]

DISCUSSION.

DISCUSSION BY DR. ROBERT B. GREENOUGH, M.D.,
BOSTON.

IN regard to the cases of mild erysipelas: in the cases that we had in Paris in April, May and June, 1915, I was not struck with the mildness of the erysipelas. On the other hand, there were some cases of erysipelas which were quite as serious as any others that I have seen elsewhere. On the other hand, the condition of which Dr. Churchman speaks reminds me very forcibly of the cases of erysipeloid infection which we have been seeing at the Huntington Hospital in connection with the treatment of cases of cancer of the face. Patients with such lesions are naturally obliged to dress their own wounds and do so under instruction, but they frequently infect themselves with mild infections, and in the course of a considerable period of time—six, eight, or ten months—develop from time to time an erysipeloid infection which adds much to their discomfort, but which does not really appear to produce any serious re-

sult. We have gone so far as to consider the use of vaccines with the idea of preventing the recurring attacks, if it might be possible to do so.

One other point in regard to localization of foreign bodies by x-ray, I would like to mention. When I was in Paris we went to visit Dr. Tuffier. He was operating that morning on a patient who had a rifle bullet somewhere in the region of the left hip. Localization of the projectile had been made by the x-ray operator, and by this method of converging lines, was made graphic by an apparatus which, resting on four points of suspension upon the patient's body, had wires which could be placed in exactly the same lines as the lines projected in the x-ray. Instead of estimating where these lines crossed, this form could be arranged in accordance with the x-ray in such a way that the rods could be projected and carried directly to the point where the bullet rested. The apparatus could be sterilized. The incision was made over the neck of the femur, immediately in front, and the rod was advanced through this incision to the point where the bullet was supposed to be. The front of the neck of the femur was exposed, and the rod hit the neck of the femur, and a centimeter's distance beyond it. There was no evidence of any fracture. But Dr. Tuffier's confidence in the x-ray operator, and the apparatus was such that he proceeded to trephine the neck of the femur, and after going down one centimeter further he came directly on the end of the bullet, which lay lengthwise in the neck of the femur, and which would not, I think, have been discovered by any other method of localization.

The remarks which Dr. Churchman has just made touch upon many of the subjects brought up in the war that are of interest to all of us in the field of surgery, and I will not take your time to comment upon all of the interesting things he has said.

In the first place, from the time of the remarkable case of suture of the spinal cord which Dr. Harte reported, up to the present day, there have been various puzzles in regard to nerve injuries, both in the way of localization, and especially in the repair or lack of return of function. One of the very remarkable features, I think, of the nerve injuries of the war has been the partial interruption of function of a nerve without apparent gross anatomical lesion. Although the end results in the way of nerve suture are disappointing, nevertheless, there seems to be a good deal of satisfaction in the results of exploratory operations on nerves, for the reason that the mere freeing up of a nerve or the removal of constricting scar tissue, without any actual division of suture, has brought about a return of function very promptly and satisfactorily. In other words, there is a possibility of relieving many of these injuries by surgery, even though in the more serious, more complete lesions, the return of function by sur-

gical treatment is not so satisfactory. In any one of these partial injuries it is undoubtedly a question whether a very considerable improvement would not occur under any circumstances with the lapse of a considerable period of time. One must admit, however, that surgical interference has hastened the recovery anyway.

I shall attempt to discuss only certain parts of this interesting paper. The first Harvard Unit, under the leadership of Dr. Cushing and Dr. Greenough, met many of these nerve injuries, but the length of service was too short to draw satisfactory conclusions as to different methods of treatment.

Some recent German statistics are interesting in this connection. Stoffel, who has studied so carefully the anatomy of the nerve trunks, believes that attempts to free these injured nerves from adhesions and to repair defects should only be undertaken with a full knowledge of the anatomical structure of the nerve. He believes that the motor tracts should always be repaired first.

Stracker (*Wiener klin. Woch.*, 1916, No. 8, p. 225), working in Spitzky's hospital, reports 225 cases of nerve injury. His observations suggest, as do Dr. Churchman's, that we must change some of our ideas as to nerve distribution and as to return of power after actual resection. There were in his series 93 resections and 39 operations of neurolysis, and only 4 graftings. Of 25 resections of the radial nerve, 12 showed recovery of motility. Of 13 resections of the median, 4 recovered. Of 13 resections of the ulnar, 2 recovered. Of 12 resections of the sciatic, 2 recovered. Of 21 resections of the peroneal, only one recovered.

In regard to trench feet, I would say that when we first reached Paris, in April, we were impressed with the number of cases in the wards which showed disturbances of circulation in the feet. Dr. Cushing suggested a careful research into the symptomatology and causes, but as the warmer weather came the cases began to disappear and we saw very few cases. We did find, however, a very large number of cases of feet which had bad weight-bearing lines, and we considered this to have been probably an important predisposing cause in trench foot.

Dr. Churchman has raised the question of a possible infection as the cause of these symptoms. It seems to me this can be nearly ruled out by the clinical observations and experimental work of Smith, Ritchie, and Dawson. (*Jour. of Path. and Bact.*, October, 1915.) Their clinical material consisted of 51 cases and their experimental work was on rabbits. They conclude that exposure of feet poorly protected to cold and wet is the cause, and adds greatly to the discomfort in the many strained and pronated feet. They were able to reproduce in rabbits changes almost identical with those in men, and the essential change seemed to be damage to the blood vessels. An initial constriction gives way to dilatation, and swelling occurs. Microscop-

ically some of the muscle fibres of the walls are shown to be destroyed. There is an excessive amount of fluid poured out into the tissues, and the resulting stasis interferes with the vitality of the cells in the surrounding connective tissue. Eventual chronic inflammatory changes may ensue.

It may be of interest to show a few lantern slides illustrating apparatus used and medico-mechanical methods of treatment for the restoration of function after nerve injuries, and the predisposition to foot troubles which had shoeing furnishes.

DISCUSSION BY DR. WILLIAM C. PETERS, BANGOR, MAINE:

On Monday of this week I dissected the musculo-spiral nerve. The case, a twelve weeks' old fracture, had wrist drop but no sensory disturbance. The wrist had been supported by plaster in the position of hyperextension. I found the nerve lying in a trough under tension but subjected to no pressure, and I was able to free it with a blunt dissector without using a chisel.

This case is interesting because it is one which is likely to occur in ordinary practice, and shows how slight tension or pressure is necessary to give paralysis.

DISCUSSION BY DR. A. C. HEFFENGER:

I wish to ask Dr. Churchman what experience he has had with bullets or foreign bodies remaining or lying in the brain, especially in the right lobe anteriorly.

DR. JOHN W. CHURCHMAN (closing):

The unfortunate part about the surgical treatment of nerve-injuries of this character is that the operation is very seldom done soon enough. This has been a factor in the French experience. The exigencies of this war have made it necessary for patients to travel from one hospital to another, sometimes in rapid succession, particularly if there is an active drive on, so that they do not reach a final hospital, where a nerve operation could be done, until some time after the lesion has occurred. Furthermore, the nerve injuries are often associated with badly infected bone injuries; in such cases operation is out of the question, and in the case I showed you, the operation could not be undertaken until nine months after the injury. I think it possible that the series that Dr. Osgood referred to in the German hospitals was probably at the front, at hospitals where they send special cases to special men who get their cases early. The fact that an interval did not intervene may account for the improved results. However, the feeling among the French neurologists is rather one of complete pessimism.

Dr. Greenough said that the erysipelas which he saw in Paris was not of a mild type but se-

vere. I think that that may be due to the fact that the cases he saw came from the Champagne Drive in the early part of the war. The cases I saw came entirely from Verdun. The transportation and sanitary service now is almost perfect; the wounds are extremely carefully handled, and it is possible that the more virulent cases of erysipelas are not being seen as often as at that time.

As regards the localization method, I did not go into the details of the technic. It is not a method of estimation; it is a method of great exactness. I recently localized a pin, a very small target, lying in the popliteal space, so accurately that we could stick a needle about four centimeters in, directly on the pin, and I do not think you could ask for a more exact method than that. The contrivance mentioned by Dr. Greenough is also being used in Blake's Clinic at Ris Orangis. By these two methods one can in almost every case localize a bullet exactly. The difficult cases happen in the very group that Dr. Greenough mentioned, where the bullet is near the bone.

As regards trench feet, the factors are dampness, cold and arterial lesion. Unfortunately there is a good deal of bad bacteriological work done at the front. Of course, almost all the cases are infected with multiple organisms, and, therefore, all sorts of organisms have been isolated. It seems to me the fact that mild cases occur with no lesions at all, indicates that the disease is not infectious.

As regards brain cases in the war: I have not much to say as to this. One of the striking things about the war is the extensive brain injuries which exist with no apparent harm. You have to see them to appreciate them. We had one man who had the whole front of his skull shot off for an area of four centimeters across the frontal lobe, had a bad infection in the dural space, but no symptoms. He recovered perfectly without anything being done. Many cases of bullets in the brain happened to be cases where the bullet was in the silent area. There being no symptoms, the cases were left alone.

JEJUNAL ULCER: A REPORT OF TWO CASES TREATED BY RESECTION AND END-TO-END ANASTOMOSIS OF THE JEJUNUM.*

By EDWARD P. RICHARDSON, M.D., F.A.C.S., BOSTON.

MANY of the dangers and bad functional results of gastro-jejunostomy have gradually been eliminated by improvement in technic. It becomes all the more important, therefore, to call to attention and to consider carefully the bad results that still occur. On this account I wish to report two cases of jejunal ulcer, one of

which I observed as assistant to the late Dr. M. H. Richardson, the second occurring in my own practice.

Before proceeding to a discussion of these two cases, it is well to consider briefly the pathology and clinical course of such ulcers from reported series of cases, since the question of treatment in such an unusual condition must be viewed in the light of general experience.

The first case was reported by Braun¹ in 1899. Since then numerous reported cases have been collected by various authors: Watts², Brodnitz³, Mayo Robson⁴, Tiegel⁵, Gosset⁶, Connell⁷, Paterson⁸, Schostak⁹, v. Roogen¹⁰, etc. In 1914, Schwarz¹¹ collected 146 cases, including 10 of his own; in 1915 Liebelin¹² analyzed 129 cases, exclusive of doubtful ones.

Paterson in 1909 divided the ulcers occurring in the neighborhood of a gastro-jejunostomy stoma into two classes, gastro-jejunal ulcers, which develop along the line of union between stomach and jejunum, and true jejunal ulcers which involve the jejunum alone. He says that while jejunal ulcer is a result of altered physiological processes produced by operation, gastro-jejunal ulcers are probably a direct result of the operation itself. This dictum has been borne out by subsequent clinical and experimental evidence. The difference is more than one anatomical situation and etiology. The clinical course and amenability to treatment also justify a division. The principal factor in the occurrence of gastro-jejunal ulcers is the use of non-absorbable suture material. Thus Carman¹³ and Balfour found strands of unabsorbed permanent suture material in 6 of 13 cases. Wilkie¹⁴ produced gastro-jejunal ulcer experimentally in cats, and concluded that the presence of unabsorbable sutures in the granulating area tends to delay repair, and that chronic jejunal ulcer, as found in the human subject, is probably due to the failure of the gastro-enterostomy wound to heal completely. Soresi¹⁵, in dogs, found the permanent suture still hanging in the stoma in all but one of 47 instances at periods of from one to ten months. Three cases showed ulceration of the mucosa of the stomach or jejunum. In jejunal ulcer we have not such an obvious cause for ulceration.

Liebelin, in the 129 certain cases collected by him, finds 50 gastro-jejunal ulcers, and 79 true jejunal ulcers, the latter in 9 instances combined with gastro-jejunal ulcers. His analysis of the 79 cases of jejunal ulcer gives the following facts—86.6% of the cases were between 21 and 50. The youngest was 2 months and the oldest 70 years of age; 89.5% of the cases were in men. Of 74 cases, only 26 followed retro-colic posterior gastroenterostomy; 36 cases followed anterior gastroenterostomy, in 13 instances combined with entero-anastomosis; 9 cases followed the Roux Y operation. The predominance of anterior gastroenterostomy is all the more striking since the great majority of operations in recent years have been pos-

* Read at the Inaugural Meeting of the New England Surgical Society, Boston, October 5, 1916.

terior. Almost without exception the cases had been operated on for benign disease. The interval before development of symptoms was under two years in 75%, the extremes being 2 days and 10 years.

Pathologically these ulcers resemble closely chronic ulcers of the stomach and duodenum. They occur (with a few exceptions) close to the opening, either on the efferent loop, opposite the stoma, or more rarely on the afferent loop. Multiple ulceration may be present.

Lieblein groups his cases of true jejunal ulcer as follows: Perforation into the free abdominal cavity, 24 cases; formation of an inflammatory tumor, 30 cases; chronic adhesive peritonitis without tumor formation, 9 cases; fistula into the colon, 13 cases. All the cases of the latter followed posterior gastroenterostomy.

Schwarz groups his 146 cases as follows: Perforation, general peritonitis, 25 cases. No definite perforation, subphrenic abscess or peritonitis, 4 cases; ulcers involving the abdominal wall, 51 cases; ulcers penetrating into the mesentery, 5; ulcers penetrating into the liver, 1; ulcers penetrating into the chest-wall, 2; ulcers penetrating into the colon, 19; ulcers on the stoma with resulting conditions, 39. In the last group he includes cases with stenosis or obliteration of the stoma, which he considers the result of a peptic inflammatory process.

These figures give an idea of the tendency of such ulcers to deep penetration and serious complications. Acute perforation resembles that of a duodenal or gastric ulcer, and may occur without previous symptoms. It appears even more fatal. Cases with extensive adhesions, inflammatory tumors, colonic fistulae, naturally present difficult surgical problems.

The result of treatment has been what one would expect under these conditions. Of 24 cases of acute perforation, only 9 were reported operated on; of these 6 recovered (Lieblein). Of 30 cases with inflammatory tumor present, 2 died from operation; 10 of the remaining cases required further operation. Six were operated on twice, with persistence of symptoms in certain cases, and 4 cases were operated on 4 times. Of the 9 cases without an inflammatory tumor, 4 died following operation. In one case the symptoms still persisted. Of the 13 cases with colonic fistulae, 3 died without operation; 2 cases died after operation, 3 cases had recurrence of symptoms and only 2 cases were reported sufficiently long after operation to be apparently cured. In general the operative mortality in the cases of jejunal ulcer following posterior gastroenterostomy is greater than in those following anterior.

Gastro-jejunal ulcers have apparently a less tendency to perforation, either into the peritoneal cavity or the colon, and a greater tendency to produce stenosis of the stoma. These cases also showed a marked tendency to recur after operation.

The two present cases are examples respec-

tively of jejunal ulcer, and jejunal and gastro-jejunal ulcer coexistent.

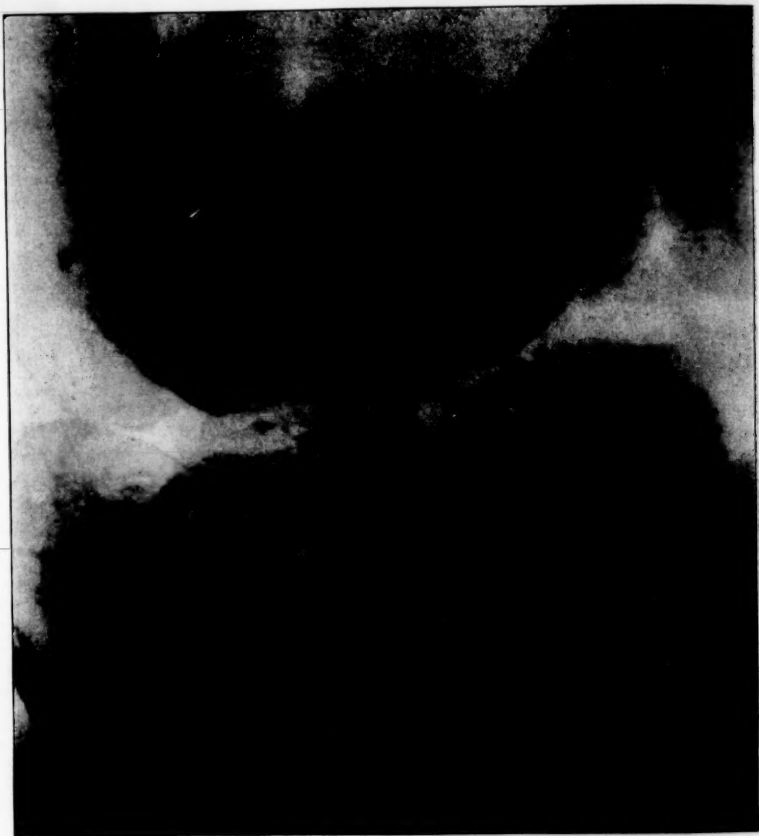
CASE 1. L. R., male, 46, m., grocer. Patient of Dr. M. H. Richardson, July 28, 1908. For two years has had almost daily pain in the epigastrium, coming on without definite relation to meals. At times the pain wakes him at night, and is severe enough to double him up. It lasts usually from 15" to 30". Has vomited only once. Blood never seen in the stools; never jaundiced; appetite good; could eat anything if he did not feel afraid to do so. Well until 3 yrs. ago. No definite illness in past except as above. Weight 3 yrs. ago 220 lbs., now 178 lbs. F. H. negative. Examination shows a small epigastric hernia, and a palpable mass in the epigastrium. The fasting stomach was empty. A test meal showed a somewhat delayed motility; free HCl present; no lactic acid; guaiac test negative.

Operation. Aug. 20, 1908, by Dr. M. H. Richardson: Median epigastric incision. Examination showed the stomach rather larger than normal. On the anterior surface of the pylorus and the beginning of the duodenum was an indurated area corresponding to a slight puckering and discoloration on the surface. Extent of induration about 1 by 1-2 inches. Gall-bladder slightly adherent to duodenum, markedly fixed to the region of induration. No enlarged glands felt. Posterior gastro-jejunostomy, iso-peristaltic, made with two continuous rows of silk sutures, at a point as near as possible to the origin of the jejunum. Operation done without clamps.

March 10, 1910, patient reported that he had been well until the previous fall. Since then he had had irregular abdominal pain, becoming severe for two months. The pain goes to the back. Now he suffers terribly. There has been no vomiting. No blood noticed in stools. Wt. 188. Examination of abdomen negative.

Operation. April 12, 1910, by Dr. M. H. Richardson. The ulcer of the duodenum was apparently healed, but still distinctly visible as a scar. The gall-bladder was adherent to the duodenum. No gall-stones. At the site of the old gastro-enterostomy, there was a marked induration, especially of the jejunum at the point of union and of the mesentery of the jejunum. The stoma was still open and about 1 inch in diameter, and was readily palpable on account of the induration around it. Adhesions separated and jejunum dissected from stomach at the line of union. Opening in the stomach closed. Directly opposite the stoma, at the apex of a fold of the jejunal loop, was a deep punched-out ulceration 3-4 inch in diameter, apparently extending through all coats into the mesentery. About two inches of the jejunum resected and an end-to-end anastomosis done with silk. Cigarette wick to joint. Dr. W. F. Whitney's microscopic diagnosis was "Simple ulceration."

The patient made a good recovery after operation, and for some months was completely relieved. Then there developed a recurrence of symptoms similar to those in the first place—irregular, severe pain with occasional vomiting. Under medical treatment by Dr. F. W. Palfrey, these symptoms improved for a year, and then recurred. When last seen by him on Oct. 9, 1911, he was still suffering severely at times. The symptoms were thought to be due to a recrudescence of the duodenal ulcer.



CASE 1. X-ray by Dr. L. B. Morrison, Oct. 23, 1916, two hours after bismuth meal. Pyloric obstruction, no duodenal stasis. No evidence of jejunal obstruction at point of anastomosis.

October 4, 1916, he is reported in fair health, is able to work, but suffers occasionally from his stomach. He has had no further operation.

[Note. On Oct. 12, 1916, the patient was finally seen. He states that he has improved considerably since last seen. He has been able to do light work without interruption. Almost daily he has a distressed feeling in the epigastrium, coming on irregularly, occasionally at night, lasting about half an hour. This is relieved by bicarbonate of soda. It is not severe enough to prevent his working. He eats ordinary food freely—the kind of food seems to make no difference in regard to the pain. There has been no vomiting, and no blood noticed in stools.

Examination shows him to be apparently in good condition. Examination of chest and abdomen negative. No hernia in scar. A large left inguinal hernia present. Wt. 161.

An x-ray study was made by Dr. L. B. Morrison on Oct. 23, 1916. His report follows: "Fluoroscopic

observations show a large atonic stomach of horizontal type with definite obstructive peristalsis, the waves cutting in deep and rolling well over the antrum. The duodenum was in behind—was unable to get a good view on the plates or fluoroscope in any position, although the bismuth seemed to be escaping in small quantities. There was no evidence of any obstruction in the jejunum, as the plates taken two hours after the meal show normal passage, the bismuth having reached the ileum. Conclusions: Obstructive peristalsis, the absence of the duodenal filling; the dilated stomach suggests a duodenal ulcer. There was no evidence of jejunal obstruction. I could find no evidence of where the anastomosis was made." (See Fig. 1.)

The case, therefore, at the present time would seem a suitable one for further operation, preferably a Finney pyloroplasty. However, after his past experience, with his present comparative comfort, he is not inclined to accept further surgery.]



CASE II. X-ray by Dr. A. W. George, Sept. 23, 1916, shortly after bismuth meal. Slight deformity of duodenum, no duodenal stasis. No obstruction at point of jejunal anastomosis.

CASE 2. I. E. C., male, 28, m. Patient of Dr. W. O. Hewitt, Attleboro, Mass. For a year and a half patient has had pain in the epigastrium, coming on without definite relation to meals, chiefly while at work. He has the pain almost daily, although there are occasional remissions. Sometimes the pain makes him walk the floor at night. The pain is somewhat relieved by soda, and occasionally by eating, although the pain would recur an hour later. Has never vomited. No blood noticed in stools. Present weight 160; has lost 24 lbs. Examination was negative except for slight tenderness in epigastrium. X-ray showed no definite evidence of duodenal ulcer, but was somewhat suggestive of gall-stones.

Operation at Sturdy Hospital, Attleboro, Nov. 14, 1914. Epigastric incision through right rectus. The gall-bladder was negative. The duodenum showed induration of the anterior wall of its first part, due to ulcer. The stomach was normal in size. The appendix could be felt in the right iliac

fossa, but was bound down by adhesions and could not be delivered. A posterior iso-peristaltic gastro-jejunosomy was done, the loop of the jejunum being as short as could be brought to the abdominal wall. Two layers of continuous silk were used, an exceptional instance in this case.

The patient made a good recovery, and was relieved of his symptoms for 9 mos. Then the pain came on again about two hours after eating. It would last until he took the next meal. Sometimes he could not eat on account of the pain. Sometimes the pain would last all night so that he could not sleep. The pain increased in severity, so that he had to give up work. The pain was constant like a dagger. No vomiting. No blood from bowels. Wt. 143 lbs.

Examination showed a definite acute sharply localized point of tenderness, 2 inches above, 1 inch to the left of the navel. Here there was a sense of resistance suggesting an indefinite mass.

X-ray examination by Dr. A. W. George gave the following findings:

"Plates made of the gall-bladder region. These show no evidence of gall-stones.

Following the bismuth meal, examination was made of the stomach, both by the plate method and by fluoroscope.

The x-ray shows the stomach to be emptying through the gastroenterostomy opening.

There is no evidence of any bismuth passing through the pylorus, and the first portion of the duodenum is not visualized. The stomach itself is of normal outline and position; there is no evidence of an ulcer. The emptying time of the stomach is extremely short; nearly half of the bismuth meal being in the small intestine at the end of 15 minutes. This rapid emptying is a condition which frequently occurs with gastroenterostomy, and which itself may cause a variety of symptoms. The examination in 6 hours after the meal shows the bulk of the bismuth to be in the lower end of the ileum. This is significant as we would expect the bismuth to be further along on account of the rapid emptying of the stomach. I believe that this is a definite ileal stasis. The caecum is high in position and more or less distorted in outline and contains gas with the bismuth. This ileal stasis, together with the abnormal condition of the caecum, suggests the possibility of post-operative adhesions involving the right lower quadrant."

Operation. Feb. 15th, 1916. Median epigastric incision. At the site of the old ulceration of the duodenum, nothing could be seen or felt. The calibre of the pylorus appeared normal. There was no thickening of the muscle. Gall-bladder negative. The whole gastroenterostomy felt thickened and indurated. There was definite induration of the transverse mesocolon on the right edge of the stoma. The jejunum proximal to the stoma was adherent to the mesocolon. There was another point of induration in the mesentery of the jejunum opposite the stoma. The intestine was separated from the stomach along the line of union, and showed the following condition. There was an ulcer 1-8 in. by 3-8 in., just to the jejunal side of the line of union, on the right anterior aspect of the stoma. From the point of this ulceration, a prominent fold crossed the jejunum opposite the stoma. On the edge of the fold, on the mesenteric border of the jejunum just opposite the stoma, was an ulcer 1-8 in. in diameter, extending into the muscular coats, with much induration of the mesentery. The opening in the stomach was closed, and about 1-2 inches of jejunum resected, with end-to-end anastomosis. Wound closed without drainage.

The patient vomited large amounts for three days; after this convalescence was good. He reported on Sept. 13th, 1916. He went to work on May 1st, and has been working steadily ever since. He has had absolutely no trouble with digestion. No pain whatever. His weight is 158 lbs. Examination of the abdomen was negative.

X-ray, Oct. 5, 1916, by Dr. A. W. George: "Examination made of stomach by the bismuth method shows a stomach that is moderate in size, shape, and position with no marked evidence of deformity. Plates of the duodenum show a narrowing of the mid portion of the first portion of the duodenum. This suggests the possibility of ulcer, although not one with a large scar tissue. The duodenum empties and the bismuth passes readily into the

second and third portions and into the jejunum. There is nothing to suggest operation and no evidence of deformity or obstruction. See Figure 2.

Technically these two operations were very similar. In both there was considerable difficulty, on account of the numerous adhesions, and from the fact that the proximal end of the jejunum was too short to bring to the surface of the wound. In both instances a double layer of silk had been used; in neither case could silk be seen exposed at the operation. In the first case there was no evidence that the silk was connected with the ulceration. In the second, silk fibres could be seen on section at the base of the gastro-jejunal ulcer, and in all probability acted as an exciting cause. The jejunal ulcer also present might have been secondary in the following way. The inflammatory reaction caused by the gastro-jejunal ulcer might have produced the fold on which the jejunal ulcer was situated. This fold might be a vulnerable spot, from exposure due to its prominence, and possibly from inflammatory infiltration interfering locally with its circulation. If at a later date the gastro-jejunal ulcer should have healed, and the jejunal persisted, or if the gastro-jejunal ulcer had been overlooked, this connection could not be suspected, yet primarily the unabsorbable suture might have been responsible for the jejunal ulcer.

The etiology of jejunal ulcers is still uncertain. The work of Rosenow¹⁶ on gastric and duodenal ulcers may also have a bearing in these cases. The gastric acidity has been considered a principal cause. The situation of the ulcers, at a point exposed to the gastric discharge, would suggest the importance of the action of the gastric juice. However, hyperacidity is not always present; in fact the acidity may be normal or subnormal. Hyperacidity was found in 13 out of 18 cases (Paterson). He believes that jejunal ulcers are due to a toxic agent, which injures the jejunal mucosa so that it is digested. This toxic substance is usually free hydrochloric acid. He suggests the following condition under which the toxic action of hydrochloric acid may occur—(1) hyperacidity; (2) normal acidity, but hypersecretion; (3) normal acidity, but diminished flow or diversion of bile and pancreatic juice, and consequent diminished neutralization of the acid. The importance of the neutralization is shown by the frequency of ulceration following the Roux operation and gastroenterostomy with entero-anastomosis, which divert the biliary and pancreatic fluid from the region of the stoma. For the cases with normal or subnormal acidity, with normal neutralization, he suggests some other toxic agent in the gastric juice.

A further factor may be delay in passing along the gastric discharge, either from kinking, or from spasm, as observed by Kocher¹⁷, thus giving the gastric juice a longer time to act in the region of the stoma.

Interference with circulation may be a factor, although experimentally it is difficult to pro-

duce ulceration in this way. However, interference with the circulation may lessen the amount of anti-peptic ferment brought to the mucosa, and so favor ulceration.

The importance of infection is more clear in gastro-jejunal than in jejunal ulcers. A few cases of jejunal ulcers, usually multiple, occurring shortly after gastroenterostomy, have been considered infectious in origin. The late development of most cases of jejunal ulcer seems to exclude operative trauma as a factor.

Unfortunately in the present cases, the gastric acidity was not observed. I should like to mention, as a possible etiological factor, a contributing cause outside the stomach, such as disease of the appendix or gall-bladder. Such a condition may produce a hyperacidity in stomachs otherwise normal, and might conceivably favor an increased gastric acidity even after a gastroenterostomy. A diseased appendix or gall-bladder might itself be more directly of some etiological importance through its existence as a septic focus. In this connection, I would simply note that Case 2 showed evidence of appendicitis, with adhesions, both at operation and by x-ray.

In the matter of symptoms I wish to emphasize one point,—the occurrence of persistent, irregular pain in a gastro-jejunosomy which otherwise may be functioning well. Local tenderness over the region of the stoma, when present, is an important confirmatory sign. Obstructive symptoms, inflammatory tumor, bleeding or fistula formation may occur, but these should be evidence of deep penetration and operative difficulties rather than essentials for diagnosis.

The x-ray may give confirmatory evidence. In cases with colonic fistulae or deep pockets, this is obvious. Carman¹⁸, who studied 13 cases of gastrojejunal ulcer, found signs which he divided into two classes, first those denoting an abnormal condition, and second, those pointing to the pathological focus. In the first group he mentions six-hour retention, hyperperistalsis, large size of stomach, dilatation of the duodenum, spasticity of the stomach. In the second, he notes deformity about the stoma, narrowing of the jejunum, scant flow of barium through the gastroenterostomy opening, and fixation of the stomach at the point of anastomosis.

In regard to treatment, two lines of argument are possible. First, surgical treatment is difficult and dangerous, recurrence is probable, therefore we should persist in palliative methods, and only operate when thorough attempts to cure have failed. On the other hand, the characteristic of these ulcers is deep penetration. If we delay, it may mean only the presence of a greater inflammatory mass, the extension of ulceration into neighboring structures, with the need for more extensive and difficult resections. The actual form of surgical treatment must depend on the case. The results of palliative operative measures, chiefly jejunos-

tomy or an additional gastro-jejunosomy have been bad, since the progression of the ulceration is not necessarily stopped. The indications call for excision or resection of the ulcer, with restoration of continuity in the manner most feasible. The situation of gastro-jejunal ulcers lends them more readily to excision and a plastic on the stoma. Such ulcers should be inspected by opening the stomach or jejunum. It is possible that in certain cases the removal of an unabsorbable suture alone, as in the case of Soresi, may result in cure.

If the ulcer is obviously jejunal, resection seems the best treatment. In the present cases, the pylorus was fortunately approximately normal, and restoration to the usual arrangement made it at last possible to start again *de novo*, should the duodenal ulceration recur. The Roux operation was possible, but is itself peculiarly liable to ulceration. Should stricture or ulceration near the pylorus persist, resection, closure of the hole in the stomach, and gastro-duodenostomy would seem the ideal operation. In certain cases a jejunostomy at the time of resection might enable this to be done in two stages. In the case of absence of the pylorus, or extensive ulceration near it, it would be a matter of restoring the continuity in the most suitable way under the conditions.

Would a superficial jejunal ulcer heal if the gastroenterostomy was separated, and both openings closed, so that the ulcer was no longer directly irritated by the gastric discharge? The rare occurrence of spontaneous jejunal ulceration, as reported by Bryan¹⁹ and others, would apparently make this, if possible, an unjustifiable risk.

The question of jejunal and gastrojejunal ulcers is one of prevention rather than cure. The posterior short loop operation fulfils the condition demanded to avoid such ulcerations—the stoma at a high point in the jejunum, with consequent greater tolerance to acidity; access of bile and pancreatic fluids to neutralize the gastric juice; absence of tension on the jejunal mesentery. It should be carried out with catgut for the inner layer, and a continuous sero-serous suture of silk may well be avoided. Diet should be given with a view to the probable state of the stoma, which may heal by granulation, and to diminishing gastric acidity rather than to the appetite and powers of assimilation of the patient.

Conclusion: Jejunal ulcer may occur after posterior short-loop gastroenterostomy.

Persistent pain, following gastro-jejunosomy, especially if accompanied by local tenderness over the stoma, should suggest jejunal or gastro-jejunal ulcer.

Such ulcers are characterized by a tendency to deep penetration.

Surgical treatment undertaken early is likely to be less dangerous and more effective.

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DISCUSSION.

DISCUSSION BY DR. C. L. SCUDDER.

I think that the society is to be congratulated that this subject of gastro-jejunal ulcer has been presented for discussion by Dr. Richardson. The operation of gastroenterostomy is a common operation. It is important, therefore, to consider any of the sequelae of gastroenterostomy.

There are three things that occur to me in connection with this subject that seem to me important: First, that considering the large number of gastroenterostomies done, the incidence of gastro-jejunal ulcer is not great. If we judge by the reports in literature they amount to less than two per cent. We cannot, of course, be sure of the accuracy of that figure, because probably many cases are unreported, and unless the gastro-jejunal ulcer has been demonstrated by operation the reports of probable ulcers are untrustworthy.

It is important to distinguish between a jejunal ulcer and a gastro-jejunal ulcer. A jejunal ulcer is very uncommon in man. It is not uncommon following experimental work upon the gastro-intestinal tract of cats and dogs, where so much experimental work is done. Gastro-jejunal ulcer is an ulcer, as Dr. Richardson has pointed out, occurring in the line of the anastomosis between the stomach and jejunum at the stoma. It is at this situation where we find these post-operative ulcers in man. A gastro-jejunal ulcer may result in a perforation as an ulcer seated elsewhere. It may, therefore, cause dense perigastric adhesions. The symptoms arising from gastro-jejunal ulcer resemble very closely the symptoms of the original ulcer for which the gastroenterostomy was done. It is important, therefore, to suppose that the incidence of gastro-jejunal ulcer is probably a little greater than is determined by the reported cases in literature.

Second, a word regarding the etiology of gastro-jejunal ulcer. During the last three years I have seen three cases of gastro-jejunal ulcer. In one case it was suspected, and the patient

would not consent to operation, being fairly comfortable on a careful diet, but the symptoms were similar to those of the chronic ulcer for which the gastroenterostomy was performed. This is not a proved case of gastro-jejunal ulcer.

The remaining two cases are similar to those reported by Dr. Richardson, and were operated upon and are doing well today. In each of these operated cases I was able to demonstrate in the base of the gastro-jejunal ulcer foreign suture material which was rather firmly attached to the edge of the ulcer. In the performance of the gastroenterostomy an unabsorbable linen suture had been used, and it was found at operation. I believe that the evidence from other clinics, and the evidence here adduced, make it very plain that an absorbable suture like chromic catgut should be employed in the inner layers of the gastroenterostomy, and that if linen is to be used it should be used only in the outer layers and then with interrupted sutures.

Third, how may we prevent a gastro-jejunal ulcer from forming. I believe, although the operation of gastroenterostomy is a comparatively frequent one, that attention to the details of technic in performing the operation is of very great importance. I do not believe that this operation should be delegated to assistants and house surgeons in hospitals, because the details of its performance must be carried out as they can only be carried out by experienced operators. These technical details cannot be elaborated here, but certain of them may be enumerated. The stomach and jejunum should be handled gently. The place chosen for the anastomosis should be accurately selected both in the stomach and in the jejunum. The opening in the gastrocolic omentum should be suitable in size and position. There should be absolutely no oozing or hemorrhage during the operation. Suitable clamps should be employed both to the stomach and intestine. These clamps should be applied with just sufficient pressure and not roughly with undue pressure. Absolute cleanliness should be observed. The sutures should be placed accurately and not made to constrict. Tissue forceps should not be used during the operation. Absorbable sutures should be used upon the inner layers and interrupted sutures of linen upon the outer layers. Very careful suture of the edges of the gastrocolic opening to the stomach should be made. The gastrocolic opening should be closed posteriorly to the stoma. Three stay sutures of interrupted linen should be placed on either side of the sutured stoma. At the completion of the operation the parts operated upon should be replaced in their normal position to the left of the spine. I believe that if these details are followed with care very few gastro-jejunal ulcers will result.

Again let me congratulate the society upon having had this subject presented so admirably by Dr. Richardson.

Regarding the x-ray examination of gastro-intestinal lesions. I believe that the x-ray study of the stoma following gastroenterostomy is of the greatest assistance to a knowledge of the physical conditions of the stoma. Such a study will show the behavior of the stoma upon the emptying of the stomach. It will show any slight induration in the circumference of the stoma.

Dr. Carman's paper upon the findings of the x-ray in jejunal ulcer is a very valuable communication in connection with this subject. It is possible for the x-ray operator to detect tenderness in the stoma associated with a gastro-jejunal ulcer. The surgeon is often unable to locate tenderness.

Dr. George Holmes of the Massachusetts General Hospital and I are studying a series of post-operative gastroenterostomy cases to determine the behavior of the stoma. This study will assist in establishing a standard of normal behavior in this important group of cases.

DISCUSSION BY DR. F. B. LUND.

In some years' experience in stomach surgery, I have never had a case of true jejunal ulcer, nor yet of gastro-jejunal ulcer. I have, however, had several gastroenterostomy openings contract, and with return of symptoms, sometimes requiring secondary operation. There was granulation tissue along the line of suture, but no true ulcer with exposed base. I do not think these contractions took place because the pylorus was open, for many have stayed wide open in spite of that fact, and some have contracted even when the pylorus was also contracted, so that the stomach could not be completely emptied either way. Most of these contractions took place at a time when I was temporarily using linen thread for both layers. This is a mistake. Linen should never be used for the inner layer, where it hangs as a septic shred and source of infection, and by its presence keeps up the irritation, resulting in hyperemia, inflammation, edema, formation of granulation and then scar tissue, finally scar contraction and closure of the outlet. If linen is used for the outer layer, it should be very fine and smooth linen, and not the rough, coarse sizes.

There is much to be said for the use of chronic gut in three layers for the anastomosis.

The tendency to contraction of the opening is increased if it is made too small in the first place. This is sometimes done because of the difficulty in fat patients, adherent cases, and deep-chested patients, of getting the stomach far enough outside to do the posterior gastroenterostomy easily and make an adequate opening. If this cannot be done, an anterior gastroenterostomy should be made, for an adequate anterior operation is to be preferred to a posterior operation with a too-small opening. Anterior gastroenterostomy should always be accompanied by an entero-enterostomy, as the loop is unnecessarily long.

The posterior no-loop gastro-enterostomy, although a great improvement, does not always, in all hands, prevent the vicious circle—as I learned in two cities where the surgeons confessed to having a few cases, namely: St. Louis and New Orleans. I have had one case of my own, which was treated by an entero-enterostomy with a Murphy button, which was rendered rather difficult by the shortness of the loop. The result was excellent.

Bartlett's ingenious suggestion of introducing the halves of the button into the limbs of the bowel through an incision in the stomach and through the stoma should be borne in mind, and may make an otherwise difficult procedure easy.

In cases of contraction of both stoma and pylorus, I have gotten excellent results in several cases by disregarding the contracted anastomosis, and simply doing a Finney on the pylorus. These were in weak, exhausted patients. If the patient is in good condition, the Finney may be accompanied by separation and closure of the openings in the stomach and intestine.

Multiple operations on the stomach are, however, to be avoided, if possible, by taking adequate measures at the primary operation, because the adhesions in multiple procedures tend to cripple the parts, especially the upper jejunal loop, so that free, healthy actions are impossible, and continued anorexia and vomiting render the patient miserable and thin.

I would call attention to the necessity of closing the interval between the short loop of jejunum and the mesogastrium, to which Moscovitz has recently called attention, after having had a case of hernia of the small intestine through this opening with obstruction of the bowels. I have had one such case myself, which required an emergency operation.

The true jejunal ulcer is so rare that it does not present much of an argument against gastro-jejunostomy. The frequency of perforations, however, makes it a serious complication. I thoroughly approve of resection and end-to-end anastomosis as suggested by Dr. Richardson, for the treatment of these cases. I have had to resect the upper jejunum close to the duodenum twice for cancer. There was no room for the overlapping required by a side-to-side anastomosis, and the large round bowel made end-to-end work easy. Besides it was the only way practicable.

In regard to the causation: Contact of the acid gastric juice with the mucous membrane, which had been used to having it mixed with bile, and the contraction of the circular fibres retaining the acid secretion, have been alleged as the cause. It appears to be more frequent after the anterior operation. We have no evidence that pyloric exclusion would prevent it. The Finney plastic would probably not be followed by it, but that, as we know, is in some cases difficult, and in some cases inadvisable, on

account of the activity of the ulcer at the pylorus.

As Dr. Scudder has said, the more important treatment is preventive, and consists in making a sufficiently large operation and careful technique.

It is fortunate that the rarity of these conditions does not make it necessary to give them a great deal of consideration. When they do occur, however, we must be prepared to recognize and deal with them.

DISCUSSION BY DR. ERNEST A. CODMAN.

I think, as the other speakers have, that it is timely to bring up the discussion of jejunal ulcer, and in the main I agree with what has been said. In regard to frequency I am inclined to think that jejunal ulcer is common rather than rare after gastroenterostomy. Even in these days I still think that duodenal ulcer itself is more common than we realize. The first symptom of duodenal ulcer is sometimes perforation, sometimes indigestion and sometimes hemorrhage. Sometimes it is not characterized by any of these symptoms; it is symptomless. Sometimes one, sometimes two and sometimes all symptoms are absent. If one symptom can be absent, all can. The same I believe to be true of jejunal ulcers. Sometimes they are characterized by contraction, sometimes by perforation, but I believe that in many cases they do not cause any symptoms at all. One reason for believing this is, that in doing some experiments on dogs where I was making gastroenterostomies, I opened the animals at intervals of a month or so afterwards, and in nearly every case I found a shred of suture hanging perhaps an inch or two into the bowel, and granulation tissue about the suture line. Now Dr. Lund has defined that kind of a case as not a jejunal ulcer, but I am sure that most reported cases of jejunal ulcer are due to this cause and not to chemical action.

I have operated on two patients, in both of whom I found the little thread of suture hanging down in the intestine. I saw Dr. W. J. Mayo operate on one in which a suture was hanging down in the intestine. Now in all these cases the gastroenterostomy opening was contracted as well as ulcerated; it followed the rule of scar tissue when ulcerated and tended to contract. A contracted gastroenterostomy opening is almost synonymous with ulcer of the suture line.

In regard to treatment: In one of my cases, two previous gastroenterostomies had been done and the patient was in very bad shape. I did an anterior gastroenterostomy and the patient died. In the other I excised the old opening and made a new one and the patient recovered.

I know of a case who recovered under an original treatment of Dr. Mixer's. He introduced an elastic ligature through the old contracted opening and brought it out again

through the jejunum and stomach and then tied it, making a very easy enlargement of the gastroenterostomy opening.

Dr. Lund spoke of Bartlett's operation.

I had occasion to do that in another case, and was successful, although technically the operation was more difficult than it sounds when described.

DISCUSSION BY DR. JOHN W. CHURCHMAN, NEW HAVEN, CONN.

I am extremely sorry that Dr. Flint is not here, for this is a subject that he is interested in so far as the etiology is concerned. I hesitate to quote him, because I am not perfectly familiar with the details of his experiments. But I may say that his conclusions are very definite, and that he has material from experiments on dogs, showing not only that non-absorbable sutures are the cause of these ulcers, but that the non-absorbable material is in many cases isolated by a down-growth of epithelium about the suture which forms a little epithelial cyst that leads to ulcer. As I said, he has sections showing all the stages.

I should like to ask one question. The reader spoke of the x-ray as of value in the diagnosis of these cases. Of course, when these cases occur nothing could be more distressing, and we are anxious to find out positively whether an ulcer is present. Does the x-ray show the crater in the bismuth meal?

DISCUSSION BY DR. JOHN T. BOTTOMLEY.

Two things come to my mind that have not been mentioned: First, all ulcers have a cause, an ulcer representing only an advanced stage of some preceding process. Unless we take measures to exclude the cause or to prevent its action, there is no reason why it may not continue to act even after operation, and cause further damage. In cases of gastric or duodenal ulcer, for instance, the condition of the tonsils and the teeth should be carefully looked into and any disease there eradicated; moreover, during the operation for such ulcers the condition of the appendix and pelvic organs should always be ascertained and any source of infection removed.

I have seen two or three cases of gastro-jejunal ulcer following gastroenterostomy. In each I found a long piece of linen thread in the neighborhood of the ulcer and in each instance I was able to excise the ulcer. Dr. Crile believes that if one uses linen for the sero-serous suture, one should carefully see to it that the bite of the needle does not include the mucous layer of the stomach; in his opinion attention to this point may prevent a certain proportion of gastro-jejunal ulcers following gastroenterostomy.

I believe, too, that most of our cases have too little supervision following operation. We know that gastro-jejunal ulcers never follow a gastro-

enterostomy for cancer, and are aware, too, that in gastric and duodenal ulcers the acidity of the stomach secretion is usually increased. I feel, then, that a careful regulation of diet for patients in their convalescence—even their late convalescence—after gastroenterostomy and the inhibition of alkalis over a considerable time after operation would do much to do away with some of unpleasant post-operative occurrences.

DISCUSSION.

DR. E. P. RICHARDSON (closing): It seems to me that the distinction between jejunal and gastro-jejunal ulcers is one that deserves to be clearly drawn. The important practical point is, of course, the occurrence of gastro-jejunal ulcer in connection with the use of unabsorbable suture material. With the etiology so clearly shown in so many instances, it is a complication which should be avoidable by changes in technique. In jejunal ulcer, however, which occurs at definite distance away from the suture line, and occasionally apparently after a considerable period of time, I fail to see how the technique of the suture itself can be the most important factor. It seems to me that we must look further than the question of suture material. These cases are, of course, much rarer than gastro-jejunal ulcer, but still they do occur. I feel that Dr. Bottomley's suggestion that they may be the secondary expression of a septic focus elsewhere is very important, practically as well as theoretically. Such a focus, existing in the abdomen, might also tend reflexly, to increase the gastric acidity. This certainly occurs in stomachs otherwise normal, and I see no reason why it should not tend to occur following gastro-enterostomy.

In reply to Dr. Churchman's question in regard to the x-ray, apparently the actual crater is rarely shown by the x-ray. Other evidence shown more indirectly by the x-ray study is apparently of great importance in diagnosis.

Original Articles.

VAGINAL DELIVERY AFTER CESAREAN SECTION.*

By NATHANIEL R. MASON, M.D., F.A.C.S., Boston.

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OWING to the steadily increasing indications for the performance of Cesarean section, particularly in this country in recent years, there has developed a large class of women who must

face pregnancy and childbirth after previous Cesarean section. The majority of obstetricians consider the proper treatment of these cases is determined by the expression,—to them an axiom,—“once a Cesarean, always a Cesarean.”

These men base their view on the theory that the scar in the uterus from a former Cesarean section has weakened the uterine wall at that point, and makes rupture of the uterus a grave danger in the event of subsequent pregnancy and labor.

The object of this paper is to point out that the patient who has had a Cesarean section properly done, for some cause other than a pelvic indication, may with safety, as far as the Cesarean scar is concerned, be subjected to future pregnancy, labor and vaginal delivery, provided her convalescence has been afebrile and free from uterine infection.

A series of experiments was made in 1910, by the writer¹ and Dr. John T. Williams on pregnant cats and guinea pigs, to determine the relative strength of scar and uterine wall. Weights were suspended from sections of the uterine wall containing linear scars, and it was found that rupture invariably occurred in the muscle and not in the scar. These results confirmed the clinical observations of Schauta², who says that with modern closure of the wound rupture will more likely occur outside the scar.

Dr. Brodhead of New York in a letter to the writer a few days ago expresses the following views: “If patient has had Cesarean for eclampsia, placenta previa, or minor contraction, I can see no reason why she should not have a chance with normal labor. If the contraction is major, induction of labor at 8 months would probably be safer for the mother, at least. In other words, with marked contraction at term with a large child I would advise a second Cesarean.”

Dr. Palmer Findley,³ in a recent impartial and exhaustive analysis of rupture of the Cesarean scar, expresses himself in the following words: “I confess at the onset to have entertained a prejudice in favor of repeated Cesarean section in all cases to forestall a possible rupture, but as the work developed in my library I was led to conclude that such a position is untenable.”

I am told by Dr. Frank Konrad, who has recently been for 16 months in charge of the University Frauenklinik at Freiburg during the absence of Professor Krönig at the front, that the latter holds strongly to the view and constantly gives voice to it in his teaching, that a patient who has had a Cesarean section may with safety in a subsequent pregnancy be allowed to pass into labor and be delivered by the vaginal route.

To aid in securing a firm scar, labor should be well established, as pointed out by Dr. Charles M. Green,⁴ before the operation is performed. He states “that the scar will be thicker and stronger if the closing sutures are applied to a uterine wall thickened by several hours of contractions, than when placed in the thin, com-

* Read before the Obstetrical Society of Boston, Nov. 28, 1916.

paratively flabby wall of a uterus incised before labor has begun."

The longitudinal fundal incision is likely to give the best result from the standpoint of future strength of the scar, particularly where future Cesarean sections are contemplated. The muscular development of the uterus is greatest high on the body. The low median incision of earlier days is quite likely to produce a serious complicating factor. Omental and intestinal adhesions over the anterior face of the uterus occur in many cases after the operation. These adhesions can be well dealt with at a future operation when situated high on the uterus, but if low down, because of their close proximity to the bladder, it is often difficult to free them without injury to the bladder. It is also extremely difficult to differentiate the tissues, and from fear of doing harm to the bladder, proper coaptation of the muscular walls of the uterus is frequently not obtained at the lower angle of the wound.

Palmer Findley⁵ points out that the transverse fundal incisions are relatively insecure.

Since eventration has been abandoned a shorter and therefore stronger scar has resulted. In the performance of the operation certain points of technic should be mentioned as being essential to the securing of a firm uterine scar. The principles of Sänger⁶ should be carried out. These principles are the layer method of suturing, sutures closely placed which include the entire uterine muscle but avoid the decidua, the rolling in of the peritoneal coat and tying the sutures firmly with three knots.

Dr. Newell lays stress on a point in closure which is of vital importance. It is to place a deep suture through the uterine musculature, both above the upper angle and below the lower angle of the wound because at these points splits in the muscular tissue frequently occur in the extraction of the body and head of the child. It seems probable that failure to repair such splits is not infrequently the direct cause of an imperfect scar, because in a large proportion of the reported cases of faulty scars the weakened areas have been described at the upper and lower angles of the former incision. Lateral splits in the musculature of the uterine wall also occasionally occur because the incision in the uterus is made too small to allow the head to be delivered through it. Thorough inspection of the edges of the cut uterus should be made, by everting it, half at a time, through the uterine incision. These splits when found should always be sutured. It is well to reset the scar at repeated sections and so leave the woman with only one scar when she has had several operations.

The character of the suture material in the absence of infection probably plays but little part in the subsequent strength of the scar. Chromicized catgut of all materials used has given the best results. Silk and linen have been discarded at the Boston Lying-in Hospital.

When silk and linen were employed local infection of the wound and the subsequent development of ventral herniae were more common than at the present time. The writer at the time of the general wave of enthusiasm for iodized catgut employed it in the uterus and experienced the misfortune of having two patients develop utero-abdominal fistulae following Cesarean section.

The qualities of strength, slow absorbability and tolerance of infection without itself becoming infected raise the question as to whether or not kangaroo tendon might be an ideal suture material for uterine closure.

The following case illustrates the permanency of kangaroo tendon:

CASE 1. A. B. High forceps operation at the Boston Lying-in Hospital in 1910. Two Cesarean sections followed at the Salem Hospital in 1912 and on Nov. 28, 1913. At the second section, medium kangaroo tendon was used for the uterine closure. At a third Cesarean section performed by Dr. Newell at the Boston Lying-in Hospital on Feb. 22, 1916, nearly 2 years and 3 months after the last one, the former Cesarean scar was found to be firm and the sutures still in place.

Where there is a reason to suspect that the method of closure of the uterine wound after a Cesarean section has been faulty or infection in the convalescence has been present, we are not justified in permitting a labor of any length to occur. Such cases may tolerate labor and vaginal delivery, but it is not wise to take the risk of subjecting a uterus to labor in which the scar may be imperfect.

The operation of Cesarean section has been performed 393 times at the Boston Lying-in Hospital, beginning with the first one by the late Dr. George Haven on July 15, 1894, and ending with the most recent one by the writer on Nov. 24, 1916. Of these operations 106 have been repeated sections. The 106 repeated sections were performed on 73 women; that is, second sections were done on 49, third sections on 19, fourth sections on 2, fifth sections on 2, and a sixth section on 1.

In the early days of doing the operation, careful closure was sacrificed to speed, and proper apposition of the tissues of the uterine wall was not always secured. As a result in these cases, the uterine walls healed imperfectly and became permanently weakened. Many of the cases formerly operated upon, we judge from our present viewpoint to have been manifestly unsuitable for Cesarean section. Some of these earlier cases were patients who had been long in labor, often with ruptured membranes—women who had been examined many times in unclean fashion and those upon whom many attempts at operative delivery from below had been made. The sequence of abdominal section upon these women was puerperal infection, with marked local manifestations in the uterine

wound. A number of these cases who had been subjected to these unfavorable conditions again became pregnant, were allowed to have labors of varying duration and then repeated Cesarean sections performed. In not a single instance has any one of these 106 repeated sections come to grief either in a subsequent pregnancy or labor. To be sure, some of these cases showed uterine walls that were dangerously thin, and in several instances the operator found areas in the uterus covered by tissue amounting to hardly more than peritoneum. The account of these cases is given in the reports that follow.

The following reported cases are, with one exception, confined to those collected in this community, in order to be certain of their authenticity. The histories have been obtained from hospital records or directly from the men who have been in charge of the patients. The names of the attending obstetricians and surgeons are mentioned in most instances to call attention to the fact that these cases are occurring not infrequently about us with satisfactory results.

CASE 2. S. H., a colored primipara of 16, had a first Cesarean section for a justo-minor pelvis performed at the Boston Lying-in Hospital on Feb. 5, 1898. The operation was performed after 19 hours of labor, the patient being fully dilated and with ruptured membranes. A septic convalescence followed, in the course of which the entire abdominal wound broke down. She has had five sections since that time, one of which was a twin birth. Some of the incisions have been in the lower abdomen starting from just above the symphysis pubis. Such extensive adhesions formed after the first operation that the five subsequent ones have been extra-peritoneal. At the last operation, the sixth section on Oct. 14, 1916, Dr. Torbert found an area in the lower third of the scar of the size of the palm of the hand, close to the bladder, covered over only by peritoneum. A careful plastic has placed this patient, we trust, in a position to hold the record of the world for Cesarean section.

It seems not unlikely in this case that the dehiscence in the musculature of the uterine wall may well have been the sequence of former Cesarean scars low on the anterior face of the uterus in close proximity to the bladder. The well-known prevalence of Neisser infection in the colored race may also have been a causative factor in the weakening of the scar.

CASE 3. R. C. This patient was a rachitic dwarf who had five Cesarean sections performed at the Boston Lying-in Hospital. The first one was done on Feb. 20, 1909, and the last one on Aug. 30, 1916, by Dr. Torbert. Most of the incisions which had been made were the low longitudinal ones starting from just above the symphysis pubis. The following note in part was made descriptive of the last operation: "Membranes not only adherent to the uterine wall in many places, but in some spots had actually coalesced with the old uterine scar which at these

points was as thin as paper. Deemed advisable to remove this portion of the uterine wall. Piece about 3 cm. in diameter excised. Ventral abdominal hernia repaired at the same time. Good convalescence."

In this instance again the uterine incision was not far removed from the bladder.

CASE 4. J. W., a colored primigravida of 19, with a generally contracted pelvis, was delivered by Dr. Torbert at the Boston Lying-in Hospital by Cesarean section on Sept. 26, 1908. Her convalescence was complicated by an acute dilation of the stomach and a pelvic peritonitis. A second Cesarean section was done by Dr. Kimpton at a private hospital on Jan. 23, 1910. The uterus was sutured in two layers with No. 1 chromic catgut. A loop of small intestine was found to be very adherent to the fundus of the uterus but was not disturbed. The new incision was made through the former scar and extended up to the adherent gut. Convalescence uneventful. About two months later, on March 25, 1910, she entered the Boston City Hospital for acute appendicitis and was operated upon by Dr. Blake. At this operation the loop of bowel adherent to the fundus of the uterus was removed, excising with it a portion of the uterine wall. A third Cesarean section was done by Dr. De Normandie on August 12, 1911. At this operation the anterior wall of the uterus was found to have a fibrous glistening appearance, and in the centre of it, over an area 3 inches by 4 inches in size, there was only a thin peritoneal covering. The thin tissue was excised, the edges of the muscle were refreshed and brought together. The convalescence was complicated by a uterine infection during the first 10 days. A fourth Cesarean was done by Dr. Green on April 15, 1913. Uterus presented a normal appearance. Good convalescence.

The imperfect scar found at the third Cesarean section followed an excision of the gut from the uterine wall at the time of the appendectomy. A Neisser infection may also well have been present in this colored patient. The fourth section gave evidence of excellent repair of the uterine wall.

These three patients, whose histories we have just taken up, are the only ones in our repeated sections who showed serious weakness in their former scars. In many other cases the scars were visible and often contained thin areas along their course.

CASE 5. Dr. Green⁷ reports a spontaneous rupture of the uterus in the ninth labor of the patient after 71-2 hours of pains. She had been seen at her home by the house officers of the Boston Lying-in Hospital, who found a transverse presentation and a contraction ring. While arrangements for transfer to the hospital were being made, the contraction ring disappeared, labor stopped and shock developed. Dr. Green found on her admission a shoulder presentation with the left arm and a pulseless cord prolapsed through the fully dilated os. The feet of the baby were easily palpable under the abdominal wall. He delivered the patient by podalic version of a dead foetus weighing 4-3-4 lbs.

The abdomen was promptly opened while the pulse was 180. Dr. Green described his findings and operation as follows: "The uterine rent extended diagonally from well above the left broad ligament; downward close to the bladder peritoneal reflex, thence over the upper border of the right broad ligament: four fingers could be passed between bladder and uterus into the vagina; there was no rupture of large vessels. Hysterectomy was considered, but uterine suture was decided on. Deep muscular sutures of linen were passed until I came to the bladder, where it was impossible to suture the uterine muscular wall, and only the peritoneum was closed." The patient convalesced well. Four weeks later an examining finger passed through the torn cervix could feel no trace of the unsutured rent between bladder and uterus, it having evidently closed in the involution. Seventeen months later, an externe from the hospital attended the patient in her home in her tenth labor. The breech presented high, and on rupture of the membranes both feet and a pulsating cord prolapsed into the vagina. Easy traction delivered a 6½-pound living baby, the whole labor having lasted 8 hours. Convalescence was normal.

Although this patient did not have a Cesarean section scar, the uterus was forced to tolerate a strain fully as severe.

CASE 6. Dr. Green* also reports a case of complete traumatic rupture of the uterus with the escape of the placenta into the peritoneal cavity. No suturing was done and the woman recovered. She subsequently delivered herself safely in normal labor without uterine trauma.

It would seem reasonable to assume from the history of the above two cases that if the uterus can safely withstand pregnancy and full-term labor following such trauma it should be able to accommodate itself in pregnancy and labor to a well-healed Cesarean section scar.

CASE 7. M. F. A Cesarean section was performed by Dr. DeNormandie before the advent of labor at the Boston Lying-in Hospital on this patient Aug. 16, 1911, because she had a justo-minor pelvis and the head could not be pushed into the brim. The baby weighed 7 1-2 pounds. The convalescence was complicated by a uterine sepsis of 2 weeks' duration. The patient entered the hospital a second time in hard labor with the head bulging the perineum, on Nov. 2, 1913. A labor of three hours and 10 minutes was terminated by a low forceps operation and a child weighing 7 lbs. 1 oz. delivered. The third pregnancy ended with a precipitate labor of 2 1-4 hours, an 8-lb. child being delivered. The patient was attended at her home by an externe house officer from the Boston Lying-in Hospital, and it was not until after her delivery that the externe house officer learned she had been the subject of a previous Cesarean section. A fourth pregnancy was terminated on Aug. 27, 1916, at the State Infirmary in Tewksbury by a normal labor lasting 8 hours. Baby weighed 7 lbs. 7 oz.

The forces of nature effected a normal descent through the pelvic canal three times in suc-

cession following a previous Cesarean section, and twice before there was an opportunity to contemplate forcestalling vaginal delivery by the abdominal route.

CASE 8. H. L. Cesarean section at the Boston Lying-in Hospital by Dr. Hubbard for contracted pelvis on Aug. 13, 1906. Female child weighed 7 lbs. A second pregnancy was terminated by induction in England at 8 months with good results for mother and child. A second Cesarean section was done at the end of the third pregnancy at the Boston Lying-in Hospital by Dr. Torbert on Jan. 15, 1913. Female child weighed 6 1-2 lbs. Nothing remarkable was noted about the uterus at the time of operation.

CASE 9. Mrs. A. Dr. Young tells me the following obstetric history of one of his patients. The second pregnancy ended in a forceps delivery of a 7-lb. child in October, 1911. In the next pregnancy an 8 1-2-lb. child was delivered by Cesarean section on July 25, 1914. A second Cesarean section was performed by Dr. Young on Aug. 25, 1915, for an 8-lb. child. At this operation the mark of the old scar could be seen, but it was solid, no thin places being found. A fourth pregnancy ended in a 4 months' miscarriage on Oct. 14, 1916. Uneventful recovery except for the retention of one small piece of placenta for which a curettage was done.

CASE 10. Mrs. R. Dr. Richard D. Schmidt tells me of a patient whom he attended at 3 normal labors in 1909, 1910, and 1912, the babies weighing 8 1-2, 6 1-2 and 8 3-4 lbs. respectively. Her fourth pregnancy was complicated by the severe hemorrhage of a placenta previa at 7 months, for which a Cesarean section was done by Dr. Sleeper at the Salvation Army Hospital in December, 1913. Baby weighed 6 lbs. The convalescence was complicated by temperature and chest symptoms, making it impossible to exclude local infection of the uterus and pulmonary tuberculosis. Pregnancy occurred a fifth time and labor took place at full term in July, 1915. Dr. J. J. O'Brien, who was in attendance, has told me of the labor. On arrival at the patient's house he found her in hard labor with the os fully dilated and the head low. Pituitrin was given. The pains became at once markedly increased in strength and 10 minutes later, an 8-lb. child was delivered normally. It is worth while to note that the last child weighed within 3-4 of a pound of the heaviest weight of the babies in the 4 previous pregnancies. The entire labor lasted 2 hours. Convalescence was normal.

In this instance we have a patient whose uterus contained a Cesarean scar, but was able to withstand the strong pains of a precipitate labor which became tumultuous at the exhibition of pituitrin.

CASE 11. Dr. Good reports a high forceps operation performed in consultation for a justo-minor pelvis in 1908. The baby weighed 8 1-2 lbs. and was still-born. Following delivery the patient suffered considerably from trauma to the bladder and convalesced with a poor perineum. Dr. Good deliv-

ered her by Cesarean section of a baby weighing 8 3/4 lbs. in 1909 and by a second section of a baby weighing 8 lbs. in 1911. He again delivered her twice by a low forceps operation, after a hard five-hour labor of an 8-lb. baby in 1913 and after a vigorous six-hour labor of a 9-lb. baby in 1915. All four convalescences were normal.

In this instance the last child weighed more than any one of the previous babies, including the two born by Cesarean section. Forceful pains, coupled with slight cervical and perineal resistance, afford us the explanation of the easy and rapid descent of the head.

CASE 12. Dr. Percy of Arlington reports a case of a patient whose leg was amputated for tubercular disease at the age of 5. One side of the pelvis distinctly flattened. Eleven years ago her first pregnancy was ended by a destructive operation in Labrador. Six years ago she had a hard instrumental delivery. Baby weighed 8 lbs. and had a persistent obstetrical paralysis. A Cesarean section was done 3 years ago by Dr. Howard Lothrop. Baby weighed 7 1/2 lbs. One year ago a high forceps operation was performed. Baby weighed 8 1/2 lbs. and had a slight obstetrical paralysis which soon cleared up.

CASE 13. Dr. Good tells of a patient whose first labor was terminated by a difficult high forceps operation. He performed a Cesarean section in 1911 in her second pregnancy for twin babies and did a low forceps operation in 1915 after an active four-hour labor, delivering an 8 1/2-pound baby. All three convalescences were normal.

CASE 14. M. F. A forceps operation was attempted upon a primipara who had been in labor for 60 hours with no cervical dilatation and no descent of the presenting vertex but failed. A Cesarean section was performed and a child delivered weighing 7 lbs. 7 oz. The immediate convalescence was good, but after a month was complicated by pneumonia and phlebitis for one month. Her second labor was attended by Dr. J. J. O'Brien, but the patient being fearful of a second abdominal operation did not send for him until she had been in labor for 20 hours. Eight hours later she was easily delivered by a low forceps operation of a 9-lb. baby. Convalescence normal. The patient is again four months pregnant.

A labor of 2 1/2 days without progress was followed by another labor more forcible in character, but not one-half as long, which brought the presenting head of the baby, 1 lb. and 9 oz. heavier than the first baby, to the pelvic floor.

CASE 15. Dr. Percy of Arlington tells me of a patient whose first child was delivered normally. Three years ago a Cesarean section was done for placenta previa by Dr. Howard Lothrop. A third baby was delivered normally 8 months ago after a 5-hour labor. All these children weighed about 6 1/2 lbs. Normal throughout.

CASE 16. M. W. A case of antepartum eclampsia was delivered by Cesarean section by Dr. Sleeper

at the Salvation Army Hospital on Feb. 16, 1914. Premature baby weighed 6 lbs. Slight infection complicated the convalescence but a good recovery was made. A second pregnancy ended by normal delivery in twilight sleep at the New England Hospital after a labor of 15 1/2 hours on Sept. 15, 1915. Baby weighed 8 lbs. Excellent convalescence. Patient is now again 7 months pregnant.

The extra-pelvic cause which had been the indication for the section, being removed, normal labor, aided by "Dammerschlaf," took its natural course.

CASE 17. P. M. Colored primipara of sixteen. Cesarean section at the Salvation Army Hospital by Dr. Frank W. Sleeper for eclampsia on Feb. 9, 1913. Female child weighed 6 lbs. Stormy convalescence from a general infection running a high temperature off and on for 5 weeks. A second pregnancy ended in a normal delivery at the Long Island Hospital on May 20, 1914, after a labor of 16 hours. Female child weighing 6 lbs. 8 oz. A third pregnancy ended in a normal delivery at 8 months at the Boston City Hospital, Oct. 7, 1916, after a labor of a few hours. Male child weighed 4 lbs. 12 oz.

CASE 18. J. S. Dr. John T. Williams reports the case of a patient who had had a Cesarean section by Dr. Crandon for undilatable contraction ring after failure of forceps delivery by patient's physician. Two years later, on Nov. 22, 1914, Dr. Williams attended the patient at a normal delivery after a five-hour labor. A retained placenta made it necessary to enter the uterus with the hand to extract it, and on digital examination allowed the finger tips to pass into a cul-de-sac at the upper end of the scar where the thickness of the uterus was not over 1-2 inch.

These patients in the last two cases were delivered normally when the cause for the Cesarean section operation was no longer present.

CASE 19. E. P. A primipara had a Cesarean section performed by Dr. Green at the Boston Lying-in Hospital on April 2, 1914, because of a just-minor pelvis and failure to engage the head in the brim after 10 hours of strong first-stage pains. Baby weighed 9 lbs. The convalescence was complicated by a mild sepsis of 10 days' duration, at the end of which time a piece of membrane was passed. The patient again appeared at the hospital after 2 hours of hard labor on June 16, 1915, fully dilated with the head on the perineum. She was delivered by a low forceps operation of a 6-lb. baby. A slight uterine infection lasting 5 days complicated the convalescence.

CASE 20. Dr. Hubbard tells of a patient whose first labor began three weeks later than the expected time. The child was large and the attending physician, failing in his attempt at forceps delivery, called in a consultant who performed a Cesarean section. In the second pregnancy labor was induced when the patient was a few days overdue in order to secure a smaller child than before. This labor was prolonged, but otherwise normal.

I understand from Dr. Hubbard that he is now taking care of the patient for the first time in her third pregnancy and that he will decide later whether her delivery will occur by the vaginal or abdominal route.

CASE 21. A. H. This patient had two Cesarean sections done for a flat pelvis, one by Dr. Erb at St. Elizabeth's Hospital in 1907 and the other by Dr. Holmes at the State Infirmary in Tewksbury in 1910. The babies weighed between 8 and 9 lbs. A third pregnancy was terminated by an easy low forceps operation by Dr. Green at the Boston Lying-in Hospital on March 7, 1914, after a prolonged first stage with signs of exhaustion. Baby weighed 5 lbs. 4 oz. Uneventful convalescence.

CASE 22. Dr. Frank Williams reports a case where high forceps was attempted and failed. A Cesarean section was done and a 12-lb. baby delivered. The convalescence was complicated by a severe septic infection. Two years later the patient delivered herself normally of a 6-lb. child. Convalescence was normal.

These four cases of smaller babies delivered vaginally followed the delivery of larger babies by Cesarean section.

CASE 23. E. J. A colored woman with a justo-minor pelvis had three Cesarean sections performed at the Boston Lying-In Hospital in 1899, 1901 and 1907, the babies weighing 6 lbs., 6 lbs. 6 oz., and 6 lbs. respectively. The first section was done after 11 1/2 hours and the second section after 9 hours of ineffective labor. The third section was done before the advent of labor. In her fourth labor at the hospital in 1908 she delivered herself normally, after 14 hours of strong pains, of a child weighing 6 lbs.

CASE 24. J. W. A woman with an irregular pelvic contraction from hip disease had three Cesarean sections done at the Boston Lying-in Hospital in 1900, 1901 and 1905 and the babies weighed 8 lbs., 7 lbs. 8 oz., and 7 lbs. 8 oz. respectively. At her fourth labor at the hospital in 1908 her pains were harder than ever before and she delivered herself normally of a baby weighing 7 lbs. 3 oz., which was 13 oz. less than the weight of the baby for which section was originally performed.

CASE 25. M. S. An early miscarriage ended this patient's first pregnancy. A right salpingo-oophorectomy for an extra-uterine pregnancy was done in the Somerville Hospital in 1911. A Cesarean section was done by Dr. Newell for a justo-minor pelvis after 27 3/4 hours of labor at the Boston Lying-in Hospital on Nov. 20, 1914. Female child weighed 5 lbs. 3 oz. Normal convalescence. Nearly two years later the patient entered the Boston City Hospital in labor at full term. Labor lasted 24 hours, but at the end became so rapid that the house staff did not reach the patient until after delivery. Male child weighed 5 lbs. 4 oz. Normal convalescence.

CASE 26. I. N. The writer had charge of a primipara of 24, whose labor started with a rupture of the membranes. After 12 hours of nagging pains the head remained floating and the os undilated. Cesarean section was done on Jan. 26, 1914, for a 6 1/4-lb.

baby. A second labor vigorous in character brought the baby to the pelvic floor in 7 hours. A low forceps operation was done on Sept. 21, 1916, and the baby weighed 5 lbs. 5 oz.

More vigorous pains than in former labors was the factor in these four cases, which in three produced normal delivery and in one a low forceps operation after previous Cesarean section.

CASE 27. A primipara of 27 had 12 hours of labor, but the head remained high, the os undilated and the fetal heart dropped to 100. A Cesarean section was performed by Dr. Torbert and a 7-lb. baby delivered. Convalescence slow because of poor general condition. The general health of the patient improved and two vaginal deliveries followed the section, attended by the family physician. The patient had a 16-hour labor Oct. 24, 1915. The head was posterior. Two doses of pituitrin were given and a baby was delivered weighing 7 lbs. 6 oz. The patient again fell in labor with a posterior head Aug. 19, 1916, and after 6 hours of pains, aided by 2 doses of pituitrin, was delivered by low forceps of a 7 lb. 3 oz. baby. Excellent convalescence after both forceps deliveries.

Each one of the babies delivered by low forceps weighed more than the Cesarean baby. The improved general health of the patient caused stronger pains than before, and these, increased by pituitrin, brought the baby down to the pelvic floor.

CASE 28. Dr. Broadhead writes me of a case of normal labor following Cesarean section, recently reported by him at the Sloane Alumni meeting. The patient had a true conjugate of 8.50 cm. The baby had a biparietal diameter of 10 cm. and weighed 9 lbs. 12 oz. He says: "My patient had the notion in her head that she had not had a long enough chance to give birth and that the Cesarean had been perhaps not necessary. She was therefore very anxious to have a 'try,' and I agreed to this, provided she came to the hospital at once after beginning labor. The labor was very easy, terminating with several easy tractions with low forceps."

CASE 29. I. L. Dr. John T. Williams reports a personal case. A Cesarean section was done after 4 days of false pains, the pulse having risen in rate and the head remaining high. Baby weighed 6 1/2 lbs. Good recovery. In a second labor the patient having requested a vaginal delivery, after 14 hours of pains the os had dilated but slightly. A moderately hard forceps was performed. Baby weighed the same as before.

These two patients, desiring to avoid a second Cesarean section, were allowed to have labors, both of which were terminated by a forceps operation.

CASE 30. A. H. Colored primipara of eighteen. Cesarean section at the Boston Lying-in Hospital by Dr. Newell for a justo-minor pelvis on Aug. 30, 1901. Female child weighed 5 lbs. 11 oz. Normal convalescence. Second pregnancy ended in a mis-

carriage July 4, 1902. Second Cesarean section at the Boston Lying-in Hospital by Dr. Green on April 5, 1906. Male child weighed 7 lbs. and 8 oz. Normal convalescence. Fourth pregnancy ended in a miscarriage at 6 months at the Boston Lying-in Hospital on Oct. 6, 1907. Ten-ounce male macerated foetus. Fifth pregnancy was terminated by a Cesarean section at the Boston Lying-in Hospital by Dr. Newell on Oct. 5, 1909. Female child weighed 6 lbs. 9 oz. Nothing remarkable was noted about the uterus.

Cesarean sections and interruptions of pregnancy alternated in this case, but the uterus showed no impairment in its integrity when seen at the end of every other pregnancy.

CASE 31. F. P. The patient had had four difficult operative deliveries followed by four still-births. A Cesarean section was performed by Dr. Green at the Boston Lying-in Hospital on March 3, 1915. The indications were the past history and an obstetric conjugate of 8 cm. Baby weighed 7 lbs. 6 oz. Convalescence uneventful. The patient again entered the hospital on Sept. 12, 1916, and came under the writer's care. She was sent in for a second Cesarean section after 24 hours of hard pains. An examination showed a woman in active labor with a pulse of 110 of rather poor quality. The uterus had a tendency to become tonic and the head was floating. An unsuccessful attempt at a high forceps application was made. An internal podalic version was cautiously performed, with good result for mother and child. Baby weighed 8 lbs. 1 oz. A manual examination of the interior of the uterus after delivery revealed no trace of the former Cesarean section scar.

The patient's previous history indicated Cesarean section as the proper mode of delivery. It was not performed, however, because the length of labor, the tonic uterus and her poor pulse jeopardized the safety of the mother if the peritoneal cavity were to be opened. High forceps failed, and craniotomy was deemed undesirable because the baby was alive. This last baby, delivered by version, weighed 11 oz. more than the one delivered by Cesarean section. The uterus which contained a Cesarean section scar and had become tonic from a long labor withstood an internal podalic version.

A search throughout the community to find cases of rupture in the scar of the Cesarean uterus in subsequent pregnancy or labor has revealed but one case, and that a spontaneous rupture in the scar of a full term pregnancy.* This case is certainly unique in view of the fact that the suturing of the uterine wound was not at fault and the convalescence from the operation was afebrile.

This case is one of such extreme rarity that it seems proper to classify its occurrence among the accidents of surgery which the obstetric surgeon of the present day must face as the obstetric attendant of the past has met spontaneous rupture of the normal pregnant uterus in labor and embolism in the puerperium.

* Personal communication by Dr. C. H. Hare.

CONCLUSIONS.

If the advantages of the improved technic of the present day are employed, and the convalescence is free from infection, the Cesarean scar will be strong enough to withstand the distention of a full-term pregnancy and the strain of labor.

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THE REASONS FOR THE RE-ENTRY OF HOSPITAL PATIENTS.

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A SHORT time ago the writer listened to some tales and opinions, which expressed in a general way the feeling entertained by many concerning the treatment which patients receive in the larger hospitals. The burden of these complaints was that patients were often operated upon unnecessarily and that they were many times forced to return owing to the unsuccessful treatment accorded them. These criticisms were not directed toward any institution in particular; but they aroused the interest of the writer and led him to investigate the reasons for the re-entry of patients, in order to ascertain whether their return was due to inefficiency of hospital treatment, to their own inefficiency, or to vicissitudes of life encountered by some, if not by all. Naturally, over the last two causes the hospital can exert but a slight control, and in most instances, none whatever.

For the purpose of this investigation, 100 cases, all admitted more than once, were taken at random from the records of the Gynaecological Service, by one who did not even know for what purpose they were intended. Although all of these women have been treated by the service, a few have been admitted to the surgical departments of the hospital as well, and a small number have been at other hospitals. As it was impossible to find out exactly their ailments while there, only entries to Boston City Hospital wards are considered.

This paper is intended neither as a defense nor as an apology for the treatment of hos-

pital patients, but attempts to state the plain facts in the cases which follow:

NUMBER OF CASES ADMITTED	TIMES IN HOSPITAL
65	2
23	3
6	4
3	5
3	6
TOTAL 100	20

Broadly speaking, the causes for the re-entry of these patients may be classified under the following headings:

1. A new ailment.
2. Operation deferred:
 - (a) Unfavorable time to operate.
 - (b) Inconvenient time for patient.
3. Operation not accepted by patient.
4. Completion of operative procedure already begun.
5. Recurrence of disease (cancer, pelvic inflammation, etc.).
6. Unsatisfactory result of operation.

Owing to the fact that the cause often varied with each admission, and that only a few cases could be mentioned individually, statistics referring to the above scheme were unsatisfactory and confusing. For discussion, the series has been divided into 5 groups according to the number of times each patient was admitted to the wards.

The results from the study of any collection of cases vary somewhat, according to the interpretation of the individual who carries on the work. While realizing fully that in the present instance individual judgment plays a greater part than is usual, yet for that particular reason the consideration of the present series by one to whom many of its members are known, may approach nearer the truth. If there has been a leaning toward either side, it has been toward classifying questionable cases as failures of treatment. To some the grouping of certain cases may seem unjust.

It is the partial successes or failures which especially concern us, and in order not to be too tedious, they have been summarized wherever it has seemed possible.

FIRST GROUP: TWO ADMISSIONS.

Of 64 women treated twice, there were 52 whose second entrance had no connection with the efficiency of their previous hospital treatment, and of these nothing need be said, except that their return was due to various accidents, to incurable malignant disease, miscarriages, pelvic inflammation, operations advised when first in hospital and deferred at that time, etc. A certain number also refused the treatment offered at the first visit, but returned later from choice or necessity.

The partial successes number 12, with 1 failure.

Five of these were post-operative herniae.

CASE 1. Complete hysterectomy for cancer. Return after seven years. Very obese. Fitted with belt. No recurrence of cancer.

CASE 2. Intestinal obstruction,—colostomy. Later resection and lateral anastomosis of sigmoid flexure; drained. Return after six months. Old and alcoholic. Fitted with belt. No recurrence of cancer after 11-2 years.

CASE 3. Dermoid cyst and ventral suspension; drained. Return after six months. Repair of hernia, and good result.

CASE 4. Repair of cervix and perineum, ventral fixation, appendectomy. Return after three years. Hernia for one year. Repaired with good result.

CASE 5. Fibroid,—hysterectomy, appendectomy. Return after one year, with small hernia. Alcoholic; fitted with belt.

CASES 6, 7 and 8. Three cases of pelvic peritonitis from infections: one (Case 6) not operated upon at either admission; two (Cases 7 and 8) operated conservatively. One of the latter two was operated upon a second time for the removal of the remaining tube; the other returned with a fresh gonorrheal and syphilitic infection and departed without a second operation.

CASE 9. Plastic operation at the first visit. Returned one year later with procidentia and was operated upon with relief. A retroversion was uncorrected at the first operation.

CASE 10. Complete perineal tear with a small rectovaginal sinus, which was repaired three months after the first operation.

CASE 11. Operated for a kidney in the pelvis. Returned after three months for intestinal adhesions. At this time the uterus was suspended and a tube and ovary resected.

CASE 12. At first operation, thought to be cancer, and accompanied by pelvic peritonitis, multiple abscesses and intestinal obstruction. Operated a second time, after a short interval, for the freeing of intestinal adhesions. The first operation was stopped by hemorrhage. This patient is alive and well. Source of original infection unknown.

SECOND GROUP: THREE ADMISSIONS.

In this group there are 23 cases, 18 of which returned for various troubles for which the hospital cannot be held at all accountable—as examples:

CASE 1. Entered with puerperal sepsis. Entered twice more with attacks of phlebitis.

CASE 2. Entered with miscarriage and gonorrheal infection. Entered twice later with salpingitis and pelvic inflammation. No operations necessary so far.

CASE 3. Entered three times, at long intervals, for miscarriage.

The following two cases are classed as partial successes:

CASE 1. Fractured pelvis from a late forceps delivery outside the hospital with a slough and tear of the bladder wall. Has returned twice since for the repair of bladder fistulae which are numerous and small. The operations are all difficult.

CASE 2. Entered first for a miscarriage. Second admission was to a surgical service, where a myo-

mectomy was performed. This failing to give relief, a hysterectomy was performed by the Gynaecological Service three years later.

The above are both partial successes, and yet, in a certain sense, the results are what must often be expected in the classes to which all these particular ailments belong, and it is hardly fair to blame the surgeon for the results.

The following are classed as failures:

CASE 1. Carcinoma of the cervix, operated by Wertheim's method. Second admission two months after the original operation for post-operative adhesions and four months after her first visit had recurrent carcinoma.

CASE 2. After partial removal of the appendages and appendix, at her second entrance, the uterus was not suspended. A little over a year later the uterus was retroverted and an operation for relief was necessary.

CASE 3. An abdominal operation had been performed some years previous at another hospital. The first operation at the Boston City Hospital was a curettage, the uterus being retroverted.

At the time of the second visit, the tubes and one ovary were excised and the uterus fixed.

Four months later the remaining ovary was so enlarged that it had to be removed and the uterus again fixed.

Cases 2 and 3 seem to show errors in judgment or technic which may happen to anyone. Case 1 is on the border-line, for cancer may return, no matter how skillful the first operation.

THIRD GROUP: FOUR ADMISSIONS.

This is made up of 6 cases: 5 admitted for sequelae of pelvic infections, after labor, abortion and gonorrhoea. For these the hospital is not responsible. Three of the five became pregnant after a conservative operation: one an ectopic gestation.

The sixth is counted as a partial failure, and is given in detail.

CASE 6.

Admissions.

1905. Age 41 years. Married 16 years. 8 normal labors; 8 premature—last one 4 years previous. Repair of right inguinal hernia.

1911. Prolapse. Repair.

1914. Appendectomy. Removal of gallstones.

1915. Repair of hernia in appendix wound and old umbilical hernia of 17 years' standing.

FOURTH GROUP: FIVE ADMISSIONS.

Of the three cases comprised in this group, the return of the first two cannot be charged against their treatment. Case 1 began as an extensive pelvic infection after an induced abortion, abscesses were opened, a hysterectomy performed in New York, and her last admission was for acute retention of urine, due to "nerves."

Case 2 is a poor weak woman who has had frequent miscarriages, ending with salpingitis and operation.

Case 3 is a failure, the details of which are given below.

Age 52 years. Widow 37 years. One child 38 years ago.

Admissions.

1903. Ulcer of bladder. At this time vesicovaginal fistula made.

1903. Fistula closed.

1905. Cystitis treated.

1911. Repair of vesicovaginal fistula—partial success.

1915. Vesicovaginal fistula persists—no operation. Left against advice.

This was probably a genital tuberculosis.

FIFTH GROUP: SIX ADMISSIONS.

This includes three cases, two of which have been treated in part upon the surgical services.

CASE 1. Age 53 years. Widow 19 years. Two children.

Admissions. Surgical:

1912. Trifacial neuralgia. Three branches cut.

1912. Chronic mastitis—breast amputation.

1912. Alcohol injection third division.

1913. Third division resected in mouth.

Admissions. Gynecological.

1914. Endometritis: curettage on Gyn. Service.

1915. No operation.

CASE 2. Age 36 years. Married 5 years. Has had two children and one miscarriage.

Admissions.

1906. Miscarriage: curetted.

1907. Miscarriage.

1911. Trachelorrhaphy.

1912. Miscarriage.

In 1913 gave birth to a third living child. Has had two more miscarriages, the last in 1914. Treated at Psychopathic in 1913.

CASE 3. Age 30 years. Married 4 years.

Admissions.

1906. Breast abscess: incised.

1910. Abdominal pain: no operation.

1911. Salpingitis: no operation.

1911. Retroversion: ventral suspension.

1914. Miscarriage: curettage.

1915. Adhesions. Laparotomy. Omentum adherent and under tension; suspension disappeared; pain relieved by freeing omentum.

She has given birth to seven children and has had one miscarriage.

Case 3 is a partial failure; the others are each the surgical history of a life of vicissitudes.

Every hospital has its clientele determined in a large measure by the social status of the hos-

pital and the financial resources of those who make up the community in which it is situated.

Broadly speaking, privately endowed institutions attract a class of patients superior to that which enters institutions supported by a city or commonwealth.

Re-admissions are probably less frequent in the endowed hospitals, since a greater proportion of their patients are able to give themselves a more adequate care, and, by reason of this, a larger percentage receive the full benefit of the hospital treatment. A greater number of these patients are treated at home for minor ailments; whereas the majority of those who enter a large public hospital are not only unable to avail themselves of the full benefit of hospital treatment, but are often compelled, by home conditions, to return for care during comparatively trivial complaints. Moreover, many of our patients must be operated upon in order to maintain themselves and family, whereas if their means admitted and it were possible for them to spend months or years in recovery, operation might sometimes be avoided.

There will always be re-admissions in every hospital because of the failures of surgery, and among patients of public hospitals we have a right to expect a greater proportion on account of the class of cases they receive in carrying out the object for which they were founded.

It is also fair to say that the success of many a surgical procedure is destroyed quite as often by the want of co-operation on the part of the patient as by what may be termed the failure of surgical technic. Of such cases all hospitals receive a share—the public hospital more than its share.

Those unaccustomed to surgery appear to consider the return to a hospital indicative of failure, and we not infrequently hear persons remark on the poor care and unnecessary operations in larger hospitals. Lack of care as a cause for re-entry can be practically discarded, and when we enquire among those of better circumstances in life, we find there are few individuals, whether male or female, who finish their existence without undergoing some surgical operation. This is particularly true in regard to women, for reasons which at once suggest themselves.

Of ten married women who have always had every care that money could provide; one has so far required no surgical intervention; two have had one; two, 2; and five, 3 operations each. These are not in any way selected, and considering that these women have had good care at all times, 3 hospital admissions would not seem excessive for those unable to give themselves proper care at any time.

As a matter of fact, 65% in our series have entered but twice, and only 12% over three times. In the one hundred cases: 10 had no operation; 30, one; 41, two; 15, three; 3, four operations; and 1, five. The above compares

quite favorably with the fortunes of the ten women who were treated by paid attendants, and what follows would seem to indicate that operations upon hospital patients are quite as conservative in regard to number as those performed in private. Of 65 cases twice admitted, 8 had no operation and 22 only one. Of 23 admitted three times, 2 had no operation; 7, one operation; 5, two operations; and 9, three operations. Of the 6 cases admitted 4 times, 1 had a single operation; 4, three; and 1, four operations. Of the 3 cases admitted 5 times, 1 had two; 1, three; 1, four. Of the 3 cases admitted 6 times, 1 had three, and 1 five operations.

Those in our series who have been admitted three or more times to the Gynaecological Service have been usually suffering from pelvic inflammation or its results—ectopic gestation, miscarriage, salpingitis. A few have returned as the result of attempts to preserve their capacity to bear children; for unfortunate results of operations performed; for the completion of operations partly successful; and finally, one or two with incurable disease.

We now come to the summary of those who returned because of the partial success or failure, and many of these are difficult to classify, as opinions will differ.

Among the *first group of 64 cases (2 admissions)* were 11 cases which are classed as partial successes, and one failure,—a recurrent procidentia with a retroversion; uncorrected at the first operation.

In the *second group of 23 cases (3 admissions)*, 3 cases are classed as partly successful and 2 as failures—errors in judgment.

The *third group of 6 cases (4 admissions)* contains one case which is classed as a partial failure on account of a post-operative hernia.

The *fourth group of 5 cases (5 admissions)* had but one case classed as a failure, although the infection of the urinary tract was probably beyond control at the start.

The *fifth group of 3 cases (6 admissions)* contains two cases which must be classed as partial failures.—Cases 1 and 3.

Thus among the 100 women are 15 cases partly successful and 5 failures. It is neither fair nor right to charge against hospital or surgeon the cases of pelvic infection treated in a conservative manner to save the power of reproduction, nor is it an infrequent occurrence for a second infection to follow one which is seemingly arrested.

Every surgical case cannot go smoothly, and the outcome cannot always be perfect; but the results in public hospitals, when we consider the home conditions surrounding most of our patients, will compare quite favorably with those performed in private.

From the study of these cases, it is my conviction: that patients who re-enter a public hospital do so for the most part because of the ordinary risks of life, which are somewhat greater

for them than for those in better circumstances. Less often they return from their inability or disinclination properly to care for themselves or because of the incomplete success of their treatment.

Finally, it is distinctly good hospital care which has prolonged the lives of some and enabled them to return so many times.

Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

By PAUL THORNDIKE, M.D., BOSTON.

KIDNEY.

Renal Infections. Eisendrath and Kahen (*Jour. Amer. Med. Assn.*, February 19, 1916). The authors describe a series of experiments on dogs and rabbits which show, they think, "infection travels from the bladder to the kidneys, and perinephritic tissue by way of the lymphatic in the wall of the ureter, and not along its mucous membrane." They believe their experiments are the first to show that these lymphatic capillaries in the periureteral sheath play such an important part in ascending infections. The article is an important one, and is illustrated by photographs of a number of microscopic slides. It does not seem to us convincing or complete in its proofs.

Thomas (*Urologic and Cutaneous Review*, 1916, p. 127). This is a clinical study of 240 cases of renal infections from the Mayo Clinic. The author's desire was to find out, if possible, causes predisposing to non-surgical infections of the kidneys. His conclusions follow:

1. Infections elsewhere in the body are predisposing factors in infections of the kidney and ureters.

2. Seventy-three per cent. of these infections are bilateral at the onset of the disease. The lack of pus or bacterial growth of the catheterized urine does not always mean non-infection, but non-active infection.

3. Pyelography and guinea-pig inoculation may be necessary to identify tuberculous infection and to differentiate the unilateral from the bilateral infection. The renal functional tests are frequently not of much value in differentiation between the locations of the infection.

4. Very careful technic should be followed in obtaining specimens for culture, as contaminations frequently occur and negate the bacteriologic findings.

5. Treatment affords relief or cure in 64% of cases, and should always be carried out in some form. No single method will give results in every case, so that all methods should be

tried. Pelvic lavage has probably been the most satisfactory, but whenever possible should be used in conjunction with an autogenous vaccine. Nephrectomy, when necessary, affords complete recovery from general symptoms, and improvement or cure of the infection in the remaining kidney.

H. Cabot (BOSTON MEDICAL AND SURGICAL JOURNAL, Nov. 2, 1916.) In this paper, which Cabot calls a "Consideration of the Production of Immunity," he advanced the interesting contention that, while for the prostatic patient a coexistent pyelonephritis is most evidently an important and serious complication, yet it may also be in a way a protection to him by rendering him in some measure immune; and that if this proposition is a sound one, may it not be possible to produce an artificial immunity by vaccination in a less serious way. Cabot wishes his paper to be regarded only as the beginning of a piece of work which he thinks is based upon sound premises and which may lead far. It is certainly an able and suggestive paper, and one of great interest and of great possible importance.

Renal Tests. Hohlweg (*Medizin. Klinik*, Berlin, March 21, 1915. Some years ago (1907), Hohlweg published a procedure for precipitating the nitrogenous elements in the blood. He now writes confirming the reliability of his method, and insisting upon the importance of studying the residual nitrogen in the blood as a test of renal competence and efficiency.

Scheel (*Uges Krift für Læger*, Copenhagen, April 13, 1916.) Scheel writes in the same strain, insisting upon the importance of this "rest nitrogen" estimation as a renal test, and goes so far as to state that this measure is as necessary a routine and "even more important" than to examine the urine for albumin. He places the normal amount at or below 40 mg. in 100 cc. of blood and quotes tables of cases showing variations from this standard in various conditions.

Cameron (*Journal American Medical Association*, June 3, 1916). This paper, which contains much information in a small space, represents an investigation of changes in renal efficiency resulting from operations performed under ether anesthesia, and from the back pressure of urine. He has chosen the phthalein test and the urea blood test as his measure of renal function "because of their recognized value and because they are so easily performed." His work is illustrated by various tabulations of his clinical results, and he summarizes his work as follows.

"The agreement between phenolsulphonephthalein and blood urea tests is, as a rule, very striking, although not infrequently a low phenolsulphonephthalein excretion is associated with a normal or only moderately increased blood urea concentration. These tests are of great importance in selecting the most oppor-

tune time for operation so far as renal function is concerned. Following an operation under a general anesthetic there is, as a rule, an increase in blood urea concentration. This increase is most marked after operations on the urinary tract, and especially on patients who already have diminished renal function. In a small series of cases this increase was slightly more marked following operations under gas-oxygen-ether anesthesia than following similar operations under ether. Blood urea determinations are of great value in the diagnosis and prognosis of uremic states. Not infrequently blood urea concentration can be determined when other renal function tests are very difficult or impossible. In this investigation definite symptoms of uremia in uncomplicated cases appeared when the blood urea concentration reached 180 to 200. There is a definite group of patients who have a low phenolsulphonphthalein excretion, but a normal or approximately normal blood urea concentration. Many members of this group withstand a general anesthetic without any complications due to renal insufficiency."

Spontaneous Rupture of Kidneys. Wade (*Journal of Medical Research*, July, 1915). It is the author's claim that a spontaneous rupture of the kidneys may and occasionally does occur solely and entirely because of the degree and rapidity of the swelling of the organ in severe acute parenchymatous nephritis. He presents a fatal case, in which such bilateral rupture was found.

Collateral Circulation (arterial) in the Kidneys. Liek (*Archiv. für Klin. Chirurgie*, vol. cvi, part 3). This is a long article, valuable not only for Liek's own work, but because of the extensive review of previous work on this subject. Liek found that after tying the renal artery, other arteries enlarge and make a collateral circulation to the kidney through its hilum, but that such compensation sometimes does not take place fast enough to prevent renal necrosis; while the existence of a supernumerary artery may, on the other hand, result in the survival of the kidney.

Nephroma and Hypernephroma. Fraser (*Surgery, Gynecology and Obstetrics*, June, 1916). From a morphological and clinical study of 34 cases of so-called hypernephroma. Fraser is firmly convinced that a large proportion of them are derived from renal adenomas and should be called "nephromas," holding the name "hypernephroma" for those comparatively few cases which arise from cortical super-nephroma cell elements.

Pyelography. Burns (*Bulletin of Johns Hopkins Hospital*, June, 1916). In our last report of "Recent Progress" mention was made of the dangers connected with the use of collargol as injected into the renal pelvis, and Young's paper (*BOSTON MEDICAL AND SURGICAL JOURNAL*, April 15, 1915) advocating the use of Argentide

Emulsion for this purpose, was recorded. Since then Burns writes claiming that thorium solution is the ideal medium for pyelographic work. He writes in detail of his experiments and claims that the solution is non-toxic, non-irritating, shows a good shadow, with unusual clearness of delineation. The solution is readily and quickly eliminated as it is so thin and watery. It is also perfectly clean, and it is inexpensive.

Excretion of Hexamethylenamine. G. G. Smith (*BOSTON MEDICAL AND SURGICAL JOURNAL*, October 19, 1916). Much has been written in the last few years on this subject, and among others has recently appeared the work of Falk and Sugiura from the Harriman Research Laboratory of Roosevelt Hospital, stating that in a number of cases of diseased kidneys, the excretion of hexamethylenamine was very small. Smith's paper objects to the statement as misleading, and after a careful study of their findings, and from the results of a study of fourteen cases of his own, Smith believes that Falk and Sugiura's results are misleading, and are not of great practical importance. Smith believes that serious disease of the renal glomeruli does greatly diminish "the ability of the kidneys to excrete hexamethylenamine," but claims that in cases of renal infection which offer the greatest field for the use of this drug, the colon bacillus affects the tubular epithelium, and that, therefore, glomerular excretion is not inhibited, and this drug is, therefore, of use in renal infections.

PROSTATE.

Radium in Cancer of Prostate and Bladder. B. S. Barringer (*Jour. Amer. Med. Assn.*, November 11, 1916). During the last year or two much interest has been taken in the possible usefulness of radium in the treatment of cancer of this region, and this paper is of importance in spite of the small number of cases treated during the last year. Final results of cancer are not considered, but what Barringer calls primary results, have been good. The paper confines itself to a consideration of cases of carcinoma of the bladder and prostate, the writer drawing a sharp line between cases of vesical, as distinct from prostatic, cancer. The treatment in prostatic cancer is applied by means of a radium needle pushed up through the perineum into the affected areas and guided by a finger in the rectum, while the vesical cases were treated by means of a direct cystoscope, through the sheath of which a capsule about one inch long, containing the radium, and to which a double linen thread is attached. The cystoscope is then withdrawn and the radium capsule left in the bladder, the end of the thread appearing at the meatus. The details of technic are described, and the conclusions are:

By means of radium we have caused the rapid and complete disappearance of two bladder carcinomas out of nine treated. These cases were

carcinomatous by cystoscopic appearance and microscopic examination. Time only will tell whether these patients are cured. In one case of prostatic carcinoma, treated for six months, the carcinoma and the symptoms have markedly regressed. In another case, treated three months (possibly borderland) the symptoms have improved. Of three other patients treated, one is dead, one has only recently been treated, and one is doing a full day's work, but could not be reached for examination.

Operative Approach to Prostate. Rochet (*Lyon Chirurgical* January, February, 1916). In cases where free access to the prostatic region is needed, notably in cancer, the author advocates beginning with a V incision in the perineum, and then mobilizing the whole perineum by separating, from the side, the middle fascia from its attachments to the ischio-pubic triangle, thus freeing the support of the urogenital diaphragm.

Toxicity. Thacon (*Bull. de l'Académie de Médecine*, November 16, 1915). Thacon adds more results to those he has already reported regarding the extreme toxicity of extracts of the prostate. He uses a maceration of 20 or 25 c.g. of bull prostate, which kills a rabbit a few seconds after injection. He believes that a part of the clinical picture seen with enlargement of the prostate is due to this toxic action from the prostate itself.

TESTIS.

Sex Gland Implantation. Lydston (*Jour. Amer. Med. Assn.*, May 13, 1916). During the last two or three years Lydston has published a series of articles (references to which are given in the present one) advocating sex gland implantation as a means of increasing physical and physio-sexual efficiency, and describing in detail his own experimental work along these lines. The present article summarizes his results and beliefs, and adds a detailed description of four more cases of successful testicle implantations. The author concludes his paper as follows:

"Not only do I feel strengthened in my heretofore published impressions of the value of sex gland implantation, notably in the matter of increasing physical efficiency, and especially physio-sexual efficiency, but also I am convinced that, when technic and material are right, and the recipient properly selected, preservation of hormone by the implanted gland for at least a prolonged period is certain. That permanent physiologic and therapeutic advantageous results are equally certain, I am now strongly inclined to believe. Thus far I have observed no case in which the implanted tissue had completely disappeared, or even practically so, prior to from twelve to eighteen months."

Morris (*Jour. Amer. Med. Assn.*, September 2, 1916). Morris reports another case in which a wedge-shaped segment of testicle was cut into three parts, one of which was placed beneath the sheath of the left rectus muscle, another under the right rectus sheath, and the third was in-

serted into the right side of the scrotum. The patient was a man of 27 who had both testicles atrophied as a result of mumps 14 years previous. The result was enlargement and development of the atrophied right testicle with signs of beginning sexual activity, i.e., frequent erections, etc.

Perineal Testicle. Loewe (*Jour. Amer. Med. Assn.*, October 21, 1915) Loewe reports an interesting and rare case of congenital perineal testicle in boy of 12, left testis normal, right scrotum shriveled and empty. Right testis found 5 cm. in front of anus and 2 cm. to the right of median raphe. Operation revealed a partly atrophied testis which was placed in right scrotum, and remained there. Boy's mother stated that the discovery of the absence of the testis was noted shortly after birth, but no attention has been paid to it. Congenital cases of this kind are very rare.

Short Circuit of Vas Deferens. McKenna (*Jour. Amer. Med. Assn.*, June 26, 1915). McKenna describes his technic for this procedure, which he developed as a result of work done on dogs, and reports five cases of this operation performed on men. He means by short-circuiting a "joining together of the patent lumen of the vas with a section of the epididymis or testicle." His operation is essentially a lateral anastomosis between the vas and the tail of the epididymis with a bit of silkworm gut inserted into the opening of the vas and brought out through its wall at a point two inches or so above the opening. This is left in place during the healing in order to assure the patency of the vas during this critical time. The two great essentials for success are a vas quite free from infection and plenty of free sperm in the epididymis section.

Book Review.

American Public Health Protection. By HENRY BIXBY HEMENWAY, A.M., M.D. Indianapolis: The Bobbs-Merrill Company. 1916.

This volume is a monograph on public health and preventive medicine, particularly from the standpoint of the preservation of the health of children and of their mothers, to whom the book is dedicated. It considers in a series of chapters the development of public health work in the United States, the work of the national health agencies, and compares medical and sanitary education in the United States with reference to those in other countries. The medical inspection of schools, the organization of health departments, and the preparation and training of health officers are also discussed in detail. The book aims to stimulate public interest in the problems of general hygiene and sanitation. It is to be questioned whether its style is sufficiently popular to make it successful in this attempt.

THE BOSTON Medical and Surgical Journal

Established in 1812

An independently owned Journal of Medicine and Surgery published weekly under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, JANUARY 25, 1917

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An editor will be in the editorial office daily, except Sunday, from twelve to one-thirty p. m.

Papers for publication, and all other communications for the Editorial Department, should be addressed to the Editor, 229 Massachusetts Ave., Boston. Notices and other material for the editorial pages must be received not later than noon on the Saturday preceding the date of publication. Orders for reprints must be returned in writing to the printer with the galley proof of papers. The Journal will furnish one hundred reprints free to the author, upon his written request.

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REPORT OF COMMISSION ON HABIT-FORMING DRUGS.

In the spring of 1916 the Massachusetts General Court appointed a commission to investigate the use of habit-forming drugs in this Commonwealth. The Commission consisted of Dr. Frank G. Wheatley, chairman, a trustee of the Massachusetts School for Feeble-minded, Waverley; Mr. Hermann C. Lythgoe of the Food and Drugs Division of the Massachusetts State Department of Health; and Mr. A. C. Webber, assistant district attorney. For six months this commission pursued its investigation and on January 4, 1917, returned its report to the Legislature. In this report many interesting facts are brought to light and a number of recommendations made.

Based on the expert estimate that there are between one and two million habitual narcotic drug users in the United States, it is assumed that there are about 60,000 such habitués in this Commonwealth.

"The habitual user of narcotic drugs is more frequently found in the large rather than in the small cities and rural districts. Data upon which even approximately accurate estimates could be found are not readily available. The drug habit is so prevalent in this State that comprehensive legislation is necessary to deal more effectively with the subject. The lack of effective laws regulating the distribution of these drugs must necessarily foster the drug habit. It is an established fact that the addict will not voluntarily seek treatment for his habit, except in rare cases, until his drug supply is shut off.

"The habit-forming narcotic drugs commonly used in this Commonwealth by addicts are opium and its derivatives, morphine, heroin and cocaine in the form of hydrochloride and rarely other drugs.

"The habitual use of narcotic drugs is not confined to any particular class of people, or to any particular trade, occupation or calling. Some conception of how such use has pervaded the various walks of life is shown in the report from a summary compiled from a record of a single physician engaged in a thriving practice among addicts."

The case is cited of a physician who, in twenty days, wrote over eight hundred prescriptions for narcotic drugs at a fee of \$2.00 apiece. A second physician, within a few months wrote a thousand such prescriptions for drug addicts. In a third case there were found in a single Boston drug store 4055 narcotic drug prescriptions issued by one physician between May and September, 1916. This physician, it is stated, also issued during the same period 156 similar prescriptions, which were filled by another druggist, and ninety-nine which were found in a third pharmacy. In analyzing these facts, the report points out that some consideration should be given to the element of deception that usually enters into such transactions.

"Of 254 people who applied for drugs to this physician in the course of nine months 171 were male and eighty-three were female. Of the males 115 were unmarried and 56 married; and of the females 36 were unmarried and 47 married. Their ages ranged from those saying they were twenty-one to those of sixty-one years.

"The responsibility for the illegitimate distribution of habit-forming drugs rests with the drug 'pedler' and certain physicians and druggists. The 'pedler' plies his trade upon city streets and in and about hotels and restaurants. The ease with which drug prescriptions have been secured and filled had almost driven the drug 'pedler' out of the community, as the 'pedler's' rates are extremely high, but follow-

ing recent prosecutions in Boston against certain physicians and druggists, the 'pedler' has reappeared and is doing business.

"The habitual user of morphine and other narcotic drugs should not be regarded as a chronic incurable. He can be cured. His cure, however, requires special treatment and necessary conditions not available to the general practitioner. There can be no honest drug habit cure or treatment that permits the drug victim to administer the drug to himself.

"The delivery of narcotics to an addict in course of a so-called 'reducing treatment' is but a transparent pretext and merely perpetuates the drug evil and places in circulation large quantities of dangerous habit-forming drugs. The physician in charge of one of the largest prisons in this country informed the commission that the institution has used less than one drachm of morphine sulphate during the past two years, and the largest dose administered at any time did not exceed one-sixth of a grain."

On the basis of these and other findings the Commission concludes that the present drug laws are insufficient and should be strengthened in regard to the following respects:

"1. They are not easily understood and capable of misinterpretation. The words 'obviously needed for therapeutic purposes' should be further defined.

"2. Enforcement of the laws should be made more certain by the adoption of simplified pleading forms.

"3. The penalties for violations of the law are inadequate and should be increased, and new offences defined.

"4. Places resorted to by drug addicts should be declared and treated as common nuisances and the police authorities should be given the right to arrest without warrant in certain cases.

"5. The hypodermic syringe and needle should be kept from the addict and the sale of these instruments regulated.

"6. The Boards of Registration in Medicine, Dentistry, Pharmacy and Veterinary Medicine should be given broader powers to cancel and revoke registrations and licenses.

"7. The sale and distribution of narcotic drugs by wholesale and retail druggists should be further restricted.

"8. The State Department of Health should be empowered to make rules and regulations for the distribution of narcotic drugs through druggists.

"9. Private hospitals and sanatoria should be specially licensed and subject to rigid inspection.

"10. Provision should be made for institutional treatment and care of non-criminal addicts.

"11. Additional provision should be made for the collection of statistics as to the extent of the use of narcotic drugs in the Commonwealth."

The Commission disclaims any desire to interfere in a meddlesome manner with the legitimate practice of medicine by the recommendation of unreasonably drastic laws.

"It is not the intention of the commission to recommend any interference with the honest and legitimate practice of medicine. The physician's honest professional judgment should be his sole guide in the treatment of patients. Likewise, the right of the physician to administer any remedies which he believes necessary to prevent, cure or alleviate diseases and suffering should be free from unnecessary restraint."

It does, however, advocate giving greater powers to the State Department of Health and the various state boards of registration and urges the establishment of a state institution for the treatment of non-criminal addicts.

"The commission believes that the act of 1915 should be so amended as to require drug prescriptions to bear on their face the full name of the pharmacist who fills them; also a receipt signed by the person who receives the drug; that the druggist shall verify the authority of the physician who issues the prescription; that the instructions for filling the prescription shall be followed in detail and without change; that no prescription shall be filled when more than five days old; and that the druggist shall affix to the container of the drug supplied on prescription a label that will identify it at all times.

"The commission recommends that the unlawful selling and delivery of narcotic drugs should be made a felony, and the penalties for other violations of narcotic drug laws should be substantially increased. It should be an offence for a druggist to fill a prescription for narcotics without using diligence to ascertain whether the signature of the physician is genuine. It should be an offence for physicians and druggists to have any mutual understanding as to sharing profits on drug prescriptions. It should be an offence to make any material false representation to a physician or druggist for the purpose of procuring a narcotic drug. Advertising of certain narcotic drug 'cures' should be prohibited."

There is much in the statistics, discussion and recommendations of this report that deserves thoughtful perusal by physicians and by the intelligent laity. Doubtless the seriousness of narcotic drug addiction is not nearly so great

as might be indicated by occasional articles in the sensational press; but that it is serious admits of no question and it should be the duty of the legitimate medical profession, strongly to support legislation which, in spite of its inconvenience, is necessary to reach and control those who are responsible for the prevalence of narcotic drug habits.

In this connection, attention may be called to a pamphlet recently issued by Mr. Charles B. Towns of New York on 'Federal Responsibility in the Solution of the Habit-Forming Drug Problem.' This pamphlet presents a proposed governmental solution of the habit-forming drug question considered in its medical, pharmacal and sociologic phases and with reference to its state, national and international aspects; and is written with a view to showing the inadequacy of existing laws on the subject and for the information of Congress and for the influencing of its action. In his report for 1915 the United States Commissioner of Internal Revenue has already made the following recommendations for an amendment or revision of the Harrison Narcotic Law.

"First.—A tax on the drugs specified, based upon some unit of weight, such tax to be denoted by stamps affixed to original packages or containers, and that the list of prescribed drugs be extended to include chloral-hydrate and cannabis indica, and other drugs having the same general properties, with a clear definition of 'substitutes' and 'synthetic substitutes' for such drugs.

"Second.—The repeal of Section 6.

"[This section reads: 'SECT. 6. That the provisions of this Act shall not be construed to apply to the sale, distribution, giving away, dispensing or possession of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-eighth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semi-solid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only, except liniments, ointments, and other preparations which contain cocaine or any of its salts or alpha or beta cocaine or any of their salts or any synthetic substitute for them: Provided, That such remedies and preparations are sold, distributed, given away, dispensed, or possessed as medicines and not for the purpose of evading the intentions and provisions of this Act. The pro-

visions of this Act shall not apply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not contain cocaine.']"

"Third.—That registration under this law shall be limited and restricted to persons lawfully entitled under state laws to dispense, prescribe, administer, or have in possession such drugs.

"Fourth.—That the writing of prescriptions, filling, keeping records, and the altering or forging thereof be definitely and fully covered by the law, with adequate provision for the punishment of the offences denounced therein, and providing that the tax imposed upon drugs shall not attach to prescriptions compounded from drugs once tax paid.

"Fifth.—That every person registered under the provisions of this law be required to keep record of all narcotic drugs purchased, received, dispensed, distributed, prescribed, or administered, and that collectors of internal revenue be authorized to require sworn statement covering such registered person's operation in these drugs for a given period.

Sixth.—That all of the general provisions of the internal-revenue statutes, including those relating to seizures and forfeitures, be extended to and made to apply to the drugs taxed and the persons upon whom special taxes are imposed under this law.

Seventh.—That some provision be made for the treatment, either by the Public Health Service or such other agency as may be designated, of indigent persons unfortunately addicted to the use of these drugs, where the operation of the law brings about conditions necessitating such treatment."

The solution of the problem suggested by Mr. Towns is based on a scheme of international as well as federal control and is so far-reaching that whatever its theoretical merits, its ultimate effective adoption must be a matter of years. Pending this possibility the local state regulation of narcotic drug addiction is obviously the immediate legislative and professional duty of the community.

TUBBING IN TYPHOID FEVER.

As a therapeutic measure of first importance, the tub bath has established a place for itself in the treatment of typhoid fever. Indeed, since its use typhoid fever has become a new disease,

so much so that by a great many it holds a place as a specific in the treatment of this very common infection. Since its almost universal use in the hospitals, one now rarely sees cases with marked delirium or with so much toxemia as to be lapsed into the so-called "typhoid state." While the tub bath reduces temperature, perhaps even better than other forms of hydrotherapy, that is not its function in the treatment of this disease, since, except in hyperpyrexia, temperature is the usual evidence of the reaction of the body to the infection. But the bath induces sleep better than any other measure, improves the quality of the pulse, and has a tendency to prevent or to reduce the amount of the always troublesome and dangerous tympanites. Tubbing is credited with saving from five to seven more patients to the hundred than without it.

On the other hand, this measure does not seem to have any effect to reduce complications. On the contrary, the tendency to hemorrhage and perforation is, if anything, increased. In justice, however, it must be said that this tendency is not due intrinsically to the bath treatment, but almost entirely to mishandling of the patient at a time when even ordinary palpation, unless done with the utmost gentleness, is dangerous. Plenty of trained attendants are absolutely essential to the proper carrying out of this valuable measure. Moreover it has been held that this measure carries with it an increased likelihood to relapses. Besides, it is not a measure that can be easily carried out under all circumstances. It requires a great deal of attention on the part of the medical attendants and a greater amount of perseverance if it is to be carried into effect with the proper frequency. It is a measure that cannot often be carried out in the home. And while it is true that if this remedy is of so much value that it forms the chief reason why all typhoid cases should be treated in the hospital, yet this convenience is not available in small communities, where typhoid seems to be more common.

The tub bath is a measure that is undoubtedly one against the toxemia, as is evidenced by the reduction of the incidence of delirium and the "typhoid state." Perhaps it would, then, be a safe rule to omit the measure where toxemia is not a marked feature of the infection, where there is danger of perforation or hemorrhage, or where plenty of trained attendants are not available.

NEW ENGLAND SURGICAL SOCIETY.

ATTENTION is directed to the publication in this issue of the first installment of the proceedings of the New England Surgical Society at its inaugural meeting in Boston last fall. In the issue of the JOURNAL for October 19, 1916 (Vol. CLXXV, p. 575) we commented editorially on the organization of this new society and presented a brief initial report of this meeting. The further material of this meeting will be published at approximately monthly intervals during the season and the proceedings of subsequent meetings will appear in similar manner annually in the JOURNAL, which is the official organ of the society.

THERAPEUTIC VALUE OF RADIUM.

THE letter by Dr. Blaisdell, published in another column of this issue of the JOURNAL, calls attention to a present tendency to belittle the therapeutic value of radium. This represents a perhaps natural but undesirable reaction. Merely because its therapeutic value was at first overestimated in certain quarters, is no reason now for its popular or professional neglect. Like all therapeutic measures its value should be studied, and its use availed of in the cases and circumstances under which it is properly indicated.

MEDICAL NOTES.

AWARD OF WELLCOME PRIZES.—Report from Washington on January 5 states that the Association of Military Surgeons of the United States has announced as follows the results of the Henry S. Wellcome prize competition:

"Capt. Manlon Ashford of the Army Medical Corps, who wrote on 'The most practicable plan for the organization, training and utilization of the medical officers of the Medical Reserve Corps of the United States Army and Navy, and of the medical officers of the Reserve Corps of the United States Army in peace and war,' got a gold medal and \$300.

"First Lieut. Henry C. Coe of the Medical Reserve Corps of New York City, received honorable mention for the prize, and was awarded life membership in the Association.

"A silver medal and \$200 was awarded to Asst. Surg.-Gen. W. C. Rucker of the Public Health Service, whose essay was entitled, 'The influence of the European War on the transmission of the infections of disease, with special reference to its effect upon disease conditions of the United States.'

"Passed Assistant Surgeon J. R. Hurley, of

the Public Health Service, received honorable mention for the prize, and a life membership in the Association.

"The prizes, which were given by Henry S. Wellcome, an American living in London, are annually competed for by officers of the Army, Navy, Public Health Service, the National Guard and the Officers' Reserve Corps of both the Army and the Navy."

RELATIVE VALUES IN PUBLIC HEALTH WORK.—A recent publication of the Russell Sage Foundation gives a series of percentages of preventable deaths. These have been compiled by Franz Schneider, Jr., and entitled "Relative Values in Public Health Work." He estimates that 150,000 deaths occur in this country annually from diseases which might have been prevented. To tuberculosis he gives a total of 37½%, infantile diarrhea, 20%, bronchopneumonia 14%, common children's diseases 12.6%, typhoid fever 3.7%, and various other infections 11.2%. Perhaps the most significant figure is the high percentage of deaths from common diseases of children. Preventive work in this direction has been slow and difficult in the face of the common belief that it is better for children to catch these diseases than to try to keep away from them. Inasmuch as diphtheria and croup as causes of mortality take a higher toll in lives by nearly half than typhoid, and measles falls only about one-third below the typhoid rate, there is much opportunity for general education in the unnecessary danger of allowing children to "take everything." Because they are so common, they are not feared, and it is interesting to compare their mortality rates with those rarer diseases which are so generally dreaded and avoided. Among 150,000 deaths in 1913 from infectious diseases, leprosy caused only three, hookworm had 10, anthrax caused 12 deaths and rabies caused 67 deaths. Of course there is to be taken into consideration the incapacitating nature of such diseases as hookworm, which is out of proportion to its deadliness.

MENTAL HYGIENE.—It is announced that a new publication, to be entitled *Mental Hygiene*, will be undertaken in January, 1917, to be issued as a quarterly magazine by the National Committee for Mental Hygiene and edited by Dr. Frankwood E. Williams.

Mental Hygiene will present to a wide circle of readers, in as non-technical a way as possible, problems in all articles on the practical management of mental relations of life. Today, as never before, attention is being directed to mental factors in the problems of the individual and of society. These factors are of paramount importance in the study and practical management of delinquency, crime and inebriety. We no longer ignore the fact that education must meet the needs of children who present special difficulties of adapta-

tion. The widespread determination to control feeble-mindedness raises questions of economics, law, and medicine which demand the most thoughtful consideration. New ideals in the care and treatment of those suffering from mental disorders are imposing new obligations upon the public authorities. The recognition of preventable causes of mental diseases challenge us to seek in the field of mental hygiene victories comparable to those achieved in general hygiene and sanitation.

Mental Hygiene will bring dependable information and a new inspiration to everyone whose interest or whose work brings him into contact with problems of this kind. No other periodical exists for the express purpose of serving these ends. Of interest to all thoughtful readers, to physicians, lawyers, educators, clergymen, public officials, and students of social problems, the magazine should prove of especial value.

LONGEVITY OF AMERICAN PRESIDENTS.—In a recent issue of the London *Lancet* is published the following item of comment on the longevity of American presidents and the commonly accepted diagnoses of their causes of death. This is of interest in comparison with the longevity and causes of death among any series of monarchs belonging to a European dynasty of comparable duration:

"The longevity of the Presidents of the United States is remarkable. Their ages at death were as follows: 67, 90, 83, 85, 73, 70, 78, 79, 68, 71, 53, 65, 74, 64, 77, 56, 66, 63, 70, 49, 56, 71, 67 and 58 years. Those at 56, 49 and 58, were, respectively, Lincoln, Garfield and McKinley, who were assassinated. The ages of these 24 men totalize 1663 years, or an average of 69 years each, showing, as is believed, that the stress and responsibility of leadership seems to have no effect on longevity.

The following causes of death are those popularly accepted: Washington, pneumonia (more correct accounts state edematous affection of the windpipe, or membranous croup); J. Adams, debility; Jefferson, chronic diarrhea; Madison, debility; Monroe, debility; J. Q. Adams, paralysis; Jackson, consumption and dropsy; Van Buren, asthmatic catarrh; Harrison, bilious pleurisy; Tyler, bilious attack (with bronchitis); Polk, chronic diarrhea; Taylor, cholera morbus and typhoid fever; Fillmore, debility; Pierce, dropsy and inflammation of stomach; Buchanan, rheumatic gout; Lincoln, bullet wound; Johnson, paralysis; Grant, cancer of the tongue and throat; Hayes, paralysis of the heart; Garfield, bullet wound; Arthur, Bright's disease, paralysis and apoplexy; Cleveland, debility; Harrison, pneumonia; McKinley, bullet wound."

POPULATION OF UNITED STATES.—On December 21 the United States Census Bureau issued estimated statistics of the present population of

the United States and its principal cities, based on the rates of population increase from 1900 to 1910. These figures indicate that approximately 41% of the nation's inhabitants now live in cities of over 8,000 population, as against approximately 39% in 1910. This shift of population, following a tendency long noted in more highly civilized countries, is significant on account of the many factors of life in populous cities affecting the health and social and economic status of the inhabitants:

"The entire population of continental United States for 1916 has already been estimated at 102,017,312. The total in the States, Territories and United States possessions is put at 112,444,620.

Ten States have taken censuses since the last Federal census in 1910 and seven show population increases. Kansas, South Dakota and Wyoming decreased from 1910 to 1915, the greatest reduction being in Wyoming, 2.9 per cent. The least increase was in Iowa with a growth of but 6 per cent. The greatest increase was 22.5 per cent. in Florida. In Florida, Iowa and Massachusetts the percentage of increase from 1905 to 1915 was greater than from 1900 to 1910, but in the other seven States it was much higher from 1900 to 1910 than from 1905 to 1915. In Kansas, North and South Dakota and Wyoming the rate of growth from 1900 to 1910 was nearly double that from 1905 to 1915.

In Iowa a decrease of 7082 was shown from 1900 to 1910, and an increase of 148,016 from 1905 to 1915. In New Jersey, New York and Rhode Island slight decreases were indicated by the State returns of 1905 and 1915, as compared with the increase from 1900 to 1910.

In the past six years the growth in the white population was 10,000,000, and of the negro population about three-fourths of a million.

The populations of some leading cities as estimated today are: New York, 5,602,841; Chicago, 2,497,722; Philadelphia, 1,709,518; St. Louis, 757,309; Boston, 756,476; Cleveland, 674,073; Baltimore, 589,621; Pittsburg, 579,090; Detroit, 571,784; Los Angeles, 503,812; Buffalo, 468,558; San Francisco, 463,516; Milwaukee, 436,535; Cincinnati, 410,476; Newark, 408,894; New Orleans, 371,747; Washington, 363,980; Minneapolis, 363,454; Seattle, 348,639; Jersey City, 306,345; Kansas City, 297,847; Portland, Oregon, 295,463; Indianapolis, 271,708; Denver, 260,800; Rochester, 256,417; Providence, 254,960; St. Paul, 247,232; Louisville, 238,910; Columbus, 214,878; Oakland, 191,604; Toledo, 191,554; Atlanta, 190,558; Birmingham, 181,762; Omaha, 165,470; Worcester, 163,314; Richmond, 156,687.

Census officials were careful to explain that these estimates do not take into consideration local conditions and that they are based solely on the rate of the population increase or decrease in the past."

THE CRIMINAL DELINQUENT.—Of especial interest to social workers and those interested in the criminal delinquent is the recently published Eighth and Ninth Annual Reports of the Municipal Court of Chicago, which cover the years from December 1, 1913, to December 5, 1915. Since the publication of its previous report there has been established in conjunction with the court the Psychopathic Laboratory to which are referred by judges of the Boys' Morals, Domestic Relations and Criminal Branch Courts all defendants, and sometimes witnesses, who are suspected of being insane, feeble-minded, or afflicted with other mental ailments. The duties and functions of this Laboratory and its objects in existing are discussed under such topics as "The Problem of the Repeater," "Variety of Tests Employed," "What Shall Be Done With Them," "Scope of the Laboratory and the Training and Qualifications of Directing Experts," "Varied Demands Made" and "Staff That Is Needed." The follows a summary by Dr. William J. Hickson, director of the Laboratory, since May 1, 1914, of his findings in his work in the Boys' Court and the Domestic Relations Court.

CENTRAL STATE HOSPITAL, PETERSBURG, VA.—The recently published forty-sixth annual report of the Central State Hospital of Virginia states that during the year applications were made for the admission of 614 patients, all of whom, except thirty-eight, were admitted to the hospital. Of this number 153 were suffering from manic-depressive insanity; dementia-praecox, 101; senile dementia, 88; exhaustion-infection psychosis, 83; epilepsy with either dementia or other mental disorder 32; feeble-mindedness usually with periods of mental excitement, 21; undetermined or not insane, 12. The increase in number of admissions for the year was thirty. The admissions to a state hospital for the insane usually varies from 20% to 33% of the total resident population; in this institution last year it reached a maximum of one-third.

EUROPEAN WAR NOTE.

WAR RELIEF FUNDS.—On Jan. 20 the totals of the principal New England relief funds for the European War reached the following amounts:

Belgian Fund	\$242,304.38
French Wounded Fund	185,677.05
Armenian Fund	139,828.52
French Orphanage Fund	76,082.94
Polish Fund	59,926.33
Russian Fund	7,418.79
Irish Fund	2,663.78

BOSTON AND NEW ENGLAND.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Jan. 20, 1917, the number of deaths reported was 294, against 330 for the same period last year, with a rate of 19.85, against 22.63 last year. There were 33 deaths under one

year of age, against 37 last year, and 131 deaths over 60 years of age, against 118 last year.

The number of cases of principal diseases were: diphtheria, 73; scarlet fever, 44; measles, 109; whooping cough, 2; typhoid fever, 1; tuberculosis, 41.

Included in the above were the following cases of non-residents: diphtheria, 29; scarlet fever, 18; measles, 1; tuberculosis, 1.

Total deaths from these diseases were: diphtheria, 3; tuberculosis, 24.

Included in the above were the following deaths of non-residents: tuberculosis, 1; diphtheria, 1.

TRAINING SCHOOL FOR NURSES, MASSACHUSETTS GENERAL HOSPITAL.—The graduating exercises of the Training School for Nurses of the Massachusetts General Hospital were held on January 11, 1917, in the new Moseley Memorial Building. Dr. Hugh Cabot made an address on "American Nurses and the Great War."

Massachusetts Medical Society.

COMMITTEE ON WORKMEN'S COMPENSATION ACT.

THE Committee on Workmen's Compensation Act has held numerous meetings since the middle of October, and has considered many wordings of the amendment to be offered to the Workmen's Compensation Act.

The first consideration by the committee of each was that the new wording must make a definite improvement in the Act, not only for the physicians, but for all concerned in it.

The following was selected as the Amendment to be offered after several conferences between our committee and the parent Committee on State and National Legislation, and has been introduced into the Senate as Senate Bill 135:

"During the first two weeks after the injury, and, if the employee is not immediately incapacitated thereby from earning full wages, then from the time of such incapacity, and in unusual cases, in the discretion of the Board, for a longer period, the Association shall furnish *adequate* and reasonable medical and hospital services and medicines when they are needed. *The employee shall have the right to select a physician other than the one provided by the Association, and in the event that he shall be treated by a physician of his own selection, or, where, in cases of emergency, or for other justifiable cause, a physician other than the one provided by the Association is called in to treat the injured employee, the reasonable cost of his services shall be paid by the Association, subject to the approval of the Industrial Accident Board. Such approval shall be granted only after the Board finds that the employee was so treated by such, or that there was such justifiable cause, and, in all cases, that the services were adequate and the charges reasonable.*"

Much of the work of the committee cannot be published at this time, but the committee wishes to assure the members of the Medical Societies that no stone is being left unturned in the prosecution of our work. Weekly conferences are the rule. Reports from individual doctors will be of great value to the committee, but to be of any value, must be made at once.

The Committee wishes to remind the members of Auxiliary Committees and of the District Societies that we must be prepared to face opposition, and the better we are prepared, the less that opposition will certainly be.

Preparedness can come only by prompt response to the calls made on individuals for information.

At all the meetings, enthusiasm for a better Act and better conditions has been pronounced, and we are now on the last legs of our race. Senate Bill 135 is equitable and just, and deserves the most active support of every physician in Massachusetts.

JOSEPH A. MEHAN, *Secretary.*

YOUNG INDUSTRIAL HEALTH INSURANCE BILL.

The text of the Young Industrial Health Insurance Bill, which has been introduced into the Massachusetts General Court as a substitute for the Doten Bill, will be published, with editorial comment, in the next issue of the JOURNAL.

Correspondence.

THE THERAPEUTIC VALUE OF RADIIUM.

Massachusetts General Hospital,
Boston, Jan. 5, 1917.

Mr. Editor:

The Associated Press has recently furnished to its subscribers, which are the majority of daily newspapers in this country, an article on radium based on an interpretation of the report of the Crocker Cancer Commission of Columbia University. In this article, radium is stated to be worthless as a cure in cancer and the inference that the average layman is drawing can hardly be other than that its continued use after such findings by any medical man, not only would be of distinct harm to the patient, but also would border on charlatany from a financial viewpoint.

The following editorial from the Boston Herald may be taken as typical of the impression created by this item:

"THE CANCER SCOURGE.

"One by one during the past dozen years, the so-called cancer remedies have been tried and found wanting, and now radium, the most promising of them, takes its place among the discredited 'cures.' An elaborate investigation by the Crocker Cancer Research Fund of Columbia University has just culminated in the discovery that while radium is successful as a palliative in cases on which operation is impossible, it not only does not effect a cure, but may act as a stimulant on the disease. Reporting for the Fund, Dr. Francis Carter Wood admits that by the use of large quantities of radium it has been possible in a few instances to prolong life and render the patients more comfortable. But he is also careful to point out that, when used in small quantities, radium often results in a rapid extension of the tumor, so

that the patient's condition is worse than if he had been left alone."

As a result of the dissemination of these particularly incorrect statements, many patients in private and hospital practice have been appealing to their physicians in genuine concern over their own condition and in regard to the advisability of continuing this form of treatment. Another feature of the harm done is illustrated by the case of a man who declined this week to contribute toward the purchase of radium for a large hospital in this city, with the remark: "I saw in the paper the other day that radium was no good and wouldn't be used any more."

In view of the widespread distribution of these false reports and the incalculable harm that may result both to patients and to the medical profession, it seems to me that a determined effort should be made to counteract their pernicious influence by setting forth emphatically the real status of radium—to the profession, in the medical publications; and to the layman through the newspapers. Leaving aside for the moment the variety of opinion over its ability to "cure" all forms of systemic malignant disease, radium is today a remedy which is the equal, if not the superior, of any other in the treatment of precancerous and cancerous lesions of the skin. It is with the idea of emphasizing this point that the following communication was sent to the *Boston Herald*, and subsequently published.

"To the Editor of the *Herald*:

"Newspaper interpretation of medical subjects, vital to the interests and health of the community, should be peculiarly conservative and well advised. To me your editorial comments on radium in cancer on Wednesday morning of this week seem especially open to criticism on this score.

"Briefly stated, your summing up of the findings of the Crocker Cancer Commission of Columbia University unqualifiedly placed radium in the discard as a 'cure,' damned it with faint praise as a palliative, and noted with the cheerful abandon of *Life* opportunity given the medical profession to make 'the patient's condition worse than if he had been left alone.' Such is the pessimistic side of the picture based on truth but, unfortunately for your readers, only half the truth. Simply because radium cannot act as a 'cure' in inoperable or hopeless cases of systemic cancer is no reason why your readers should be instructed to regard it as a discarded fad, to the utter disregard of countless cases of early malignant disease that this remedy has saved.

"Point out rather to your readers the significance of the recent purchase of many thousand dollars' worth of radium by the Huntington Hospital of this city as an example of how useful it is in experienced hands. Tell them of its curative effects beyond that of any other remedy in epitheliomata or cancers of the skin. Lay your emphasis on how radium can absolutely prevent cancers of the skin if people could be taught to have the early pre-cancerous possibilities, such as keratoses, warts, moles, etc., removed before degeneration starts. By such statements it seems to me you would be doing the greater service to the community and more rightly interpreting the findings of the Crocker Cancer Commission on radium."

J. HARPER BLAISDELL, M.D.

IS THERE A HYPHEN IN THE NAME OF DR. ARGYLL ROBERTSON?

Boston Medical Library, 8 The Fenway, Boston.
December 22, 1916.

Mr. Editor:

In looking over medical references and text books, I find a rather general impression that there is a hy-

phen between Argyll and Robertson in the name of the Scottish physician, Dr. D. Argyll Robertson, for whom the Argyll Robertson pupil symptom was named.

A certain similarity to such combinations of names as Klebs-Loeffler or Caldwell-Luc and many others has apparently given rise to the idea that Argyll and Robertson were two different persons. In fact, in a recent well-known trial for criminal insanity, one of the expert witnesses, who had been testifying as to the presence of the Argyll Robertson symptom in the prisoner, was asked by the opposing counsel, as a sort of catch question, whether Argyll and Robertson were two persons or one. The witness was unable to answer this, much to his mortification.

The Boston Medical Library is fortunate in having in its possession an autograph letter from Dr. Robertson signed by him most legibly and leaving no doubt that he was one person and not two and that he used no hyphen.

*With kind regards
yours very truly
D. Argyll Robertson*

The accompanying facsimile shows the name as it was written by him in 1879, and I hope it may prove useful to those who have not been quite clear in their minds as to the presence or absence of a hyphen.

JOHN W. FARLOW, M.D.

THE BLOSSOM STREET HEALTH UNIT.

Instructive District Nursing Association.

561 Massachusetts Avenue, Boston.

January 15, 1917.

Mr. Editor:

In the issue of your JOURNAL for January 11, on page 73, appears a short paragraph speaking of the success of the Municipal Health Unit on Blossom Street.

The Instructive District Nursing Association, one of the societies which most heartily entered into the plan for the Unit, and has worked there loyally since its beginning, feels that it must register a protest against your statement because it considers that, for the lack of adequate supervision, the Health Unit has failed in the chief object of such an undertaking—i. e., the co-ordination of all the agencies working for public health in the district.

"Success" of a health centre means a greater measure of success than could attend the working of any one agency by itself, and this cannot be attained by merely gathering the agencies under one roof. A thoroughly well educated nurse, with training in social work, must be at hand constantly, so to plan the activities of the center that the people under its care are referred at once to the appropriate workers and that duplication is avoided.

No supervision of this sort is to be found at Blossom Street, but we sincerely hope that should new Health units be established the Board of Health will recognize its prime importance.

Yours truly,
ELLEN HALE, Secretary.

Miscellany.

NOTICE.

ASTLEY COOPER PRIZE.

The next triennial prize of three hundred pounds, under the will of the late Sir Astley Cooper, Bart., will be awarded to the author of the best essay or

treatise on "Gunshot Wounds of the Lungs and Pleura."

The conditions annexed by the Testator are: "That the Essays or Treatises to be written for such Prize shall contain *original experiments and observations*, which shall *not have been previously published*; and that each Essay or Treatise shall (as far as the subject shall admit of) be *illustrated by preparations and drawings*, which preparations and drawings shall be added to the Museum of Guy's Hospital, and shall, together with the Work itself and the sole and exclusive interest therein and the copyright thereof, become henceforth the property of that Institution, and shall be relinquished and transferred as such by the successful candidate."

And it is expressly declared in the will "that no Physician or Surgeon, or other officer for the time being of Guy's Hospital or of St. Thomas's Hospital, in the Borough of Southwark, nor any person related by blood or affinity to any such Physician or Surgeon for the time being, or to any other officer for the time being in either of the said Hospitals, shall at any time receive or be entitled to claim the Prize."

The Prize cannot be awarded to any Essay which is the joint production of two or more authors; nor can it be awarded to any member of the Hospital or School Staff of either Guy's or St. Thomas's Hospital; but with the exceptions here referred to, this Prize is open for competition to the whole world. No essay will be eligible for the Prize unless it complies with *all* the conditions given above.

Candidates are informed that their Essays, either legibly written or type-written in the English Language, or, if in a Foreign Language, accompanied by an English translation, must be sent to Guy's Hospital, on or before January 1st, 1919, addressed to the Physicians and Surgeons of Guy's Hospital, London, S.E.

Each Essay or Treatise must be distinguished by a Motto, and accompanied by a sealed envelope containing the Name and Address of the Writer. None of the envelopes will be opened except that which accompanies the successful Treatise. The Trustees will entertain the question of the publication of the successful Essay in the following number of the Guy's Hospital Reports. This will not of itself preclude the successful competitor from publishing his Essay elsewhere upon obtaining permission.

The unsuccessful Essays or Treatises, with the illustrative preparations and drawings will remain at the Museum of Guy's Hospital until claimed by the respective writers or their agents.

C. H. FAGGE, M.S.,
Hon. Sec., Guy's Hospital.

SOCIETY NOTICES.

THE BOSTON CITY HOSPITAL.—The Boston City Hospital Medical Meeting to be held in the surgical amphitheatre, Thursday, Jan. 25, 1917, at 8.15 o'clock p.m., will discuss "The Eye, Ear, Nose and Throat in Relation to General Diseases." "The Eye," Dr. J. C. Bossidy; "The Ear," Dr. E. M. Holmes; "The Nose and Throat," Dr. C. R. C. Borden. Physicians and medical students are invited to attend. Hospital telephone, B. B. 7400.

NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at Masonic Temple, 171 Warren street, Roxbury, Tuesday, January 30, at 8 p.m. sharp. Telephone Roxbury 22753.

Business.

Communication: Some Problems of Surgery. J. E. Sweet, M.D., Director of Laboratory of Surgical Research, University of Pennsylvania.

Discussion by John T. Bottomley, M.D.

Refreshments after the meeting.

BRADFORD KENT, M.D., Secretary.

MIDDLESEX NORTH DISTRICT MEDICAL SOCIETY.—The Middlesex North District Medical Society will hold its quarterly meeting on Wednesday, January 31, in the New American Hotel, Lowell. Dinner will be served at 6 p.m. Reservations for seats must be made before January 27.

Business meeting will follow dinner, at which there will be an open discussion of present phase of Industrial Accident and Health Insurance. Dr. Samuel B. Woodward, President of the Massachusetts Medical Society, is to be at the meeting, and every Fellow of Middlesex North should be present to welcome him.

The paper of the evening, illustrated by stereopticon, will be read by Dr. Frederick H. Morse of Boston, the subject being: "The Management of Non-Surgical Cases of Chronic Intestinal Stasis."

A full attendance at this meeting is urged.

JOSEPH A. MEHAN, M.D., Secretary.

MEDICAL MEETING at the Peter Bent Brigham Hospital, Tuesday, Jan. 30, 1917, at 8.15 p.m. Assistant Surgeon General W. C. Rucker of the United States Public Health Service will speak. Subject: "The Origin and Development of the Public Health Service" (with stereopticon).

All physicians cordially invited.

D. C. HALLER, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the Society will be held in Sprague Hall, Medical Library Building, on Monday, Jan. 29, 1917, at 8.15 p.m.

Memorial addresses: Dr. Edward M. Buckingham, by Dr. George W. Gay; Dr. Walter J. Dodd, by Dr. Charles A. Porter and Dr. Roger I. Lee.

The annual business meeting will be held at 9 p.m.

HERMAN F. VICKERY, M.D., President,
GEORGE GILBERT SMITH, M.D., Secretary.

RESIGNATIONS AND APPOINTMENTS.

The resignation is announced of Dr. ORAN G. CILLEY as physician to Charles Street Jail, Boston. Dr. Cilley was appointed to this position in 1912. He is succeeded in office by Dr. H. H. Colburn, Boston.

Dr. WALTER H. BROWN has resigned as epidemiologist of the Massachusetts State Department of Health to become head of the Bridgeport Health Department.

Dr. STANLEY H. OSBORN has resigned as district health officer in Berkshire District to become epidemiologist of the State Department of Health. His former position will be filled by Dr. Howard A. Streeter of Marblehead, Mass.

RECENT DEATHS.

STEPHEN AUGUSTUS PEDRICK, M.D., died at his home in Rowley, Mass., January 11, aged 45 years. The son of Richard and Clarissa Ober Pedrick, he was born at Beverly, November 12, 1871; was educated at the Beverly schools and at Dartmouth College, and at the Tufts College Medical School, where he received his M.D. in 1896. He joined the Massachusetts Medical Society in that year and settled in practice in Rowley. He was a member of the Essex North District Medical Society and the Newburyport Medical Club. His widow, Lowando Dresser Pedrick, and a son and daughter survive him.

OZIAS M. GEORGE, D.M.D., Bellows Falls, Vt., died in that town on January 7, of pneumonia. Dr. George was born in 1842, and moved to Bellows Falls in 1865 where he began the practice of dentistry. In 1870 he was elected bailiff and served in that capacity or as trustee until a few years ago. He leaves a widow, a son and a daughter.